# SOME THEORETICAL IMPLICATIONS FROM RAPID SPEECH PHENOMENA IN MIAMI-CUBAN SPANISH

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DEDICATION

This dissertation is dedicated to the numerous persons who have been helpful during its preparation, especially the native speakers of Miami-Cuban Spanish who served as informants. It is likewise dedicated to those excellent professors whom I was fortunate enough to have studied under, who have immeasurably contributed to my understanding of language and linguistics, and also to the many other colleagues who have indirectly been helpful during the preparation of this study.

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# SOME THEORETICAL IMPLICATIONS FROM RAPID SPEECH PHENOMENA IN MIAMI-CUBAN SPANISH

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This study has three distinct, yet interrelated sections. The first of these presents an annotated bibliography of all previous phonological studies done on Cuban Spanish and on the Miami-Cuban dialect of Spanish. The second major section presents phonological rules and data from Miami-Cuban Spanish rapid speech. The third major portion discusses theoretical implications which are drawn from the data presented in the previous two sections.

The annotated bibliography presented in this study gives a detailed, critical review of all published books and articles as well as Ph.D. and M.A. theses done on Cuban Spanish and on Miami-Cuban Spanish. This section also includes all discoverable papers on these dialects read at academic conferences, as well as several unpublished studies. Also contained in this annotated bibliography are a number of phonological studies of several other Spanish dialect areas which are of interest to the present study.

The second major section of this study presents data concerning fourteen different consonantal segments and one process pertaining to

vocalic segments in Miami-Cuban Spanish rapid speech. Percentages of occurrence for each of these different segments, along with variable rules stated in terms of percentages of application are also given. There are two significant contributions to the study of dialectal phonology provided in this section: (1) It deals specifically with rapid speech; (2) It gives actual percentages of occurrence of the different surface manifestations of different systematic phonemes of Miami-Cuban Spanish as well as the percentages of application of each portion of these variable rules which are needed to account for these surface outputs.

Based primarily on the rapid speech data presented in the previous section, the final portion of this study discusses a series of theoretical questions which surface as a result of these data. Some of the traditional analyses of Spanish phonological processes found in various generative descriptions of different Spanish dialects, e.g., the underlying [-continuant] status of the voiced obstruents /b d g/, are questioned, and alternative analyses are proposed. Also, some of the traditional analyses are rejected because they depend on the use of extrinsic rule ordering, highly abstract underlying representations, etc., notions which are rejected herein, as they have been previously rejected by other linguists, for having little or no psychological reality.

Based on the relatively small corpus of data under analysis in the present study (approximately five hours of recorded social conversation), it appears evident that many phonological processes that occur in Miami-Cuban Spanish rapid speech are difficult to account for using the traditional generative approach, or for that matter, any other heretofore proposed linguistic theory, e.g. the surface manifestations of nasal segments in this dialect. Such data, it would seem, force us to either reject, or at least

reanalyze our thinking relative to standard nasal assimilation, at least for rapid speech. If a relatively small corpus of rapid speech data from a single Spanish dialect can cause a number of weaknesses to surface in some of our current descriptions of Spanish, it seems very likely that a greater amount of data on rapid speech, including those from other Spanish dialects, may well have an impact on our current phonological model as well as in our ultimate phonological description of Spanish, and also on those of other languages as well.

Bohdan Saciuk
Chairman

# CHAPTER ONE

# INTRODUCTION

## 1.1 Purposes and Objectives

Because of many complex historical, political, and socio-economic factors, since 1492 the language of Spain has evolved into many diverse dialects and sub-dialects in the New World. Even in 1492 the language of Spain was far from being a homogeneous entity, but rather, a variety of dialects, already stratified along different lines of political and/or religious demarcations. The Spanish of Granada, for example, was distinct from that of Madrid, Barcelona, or Bilbao.[1] The stratification of peninsular Spanish in 1492 and later has, in many ways, contributed to the development of American-Spanish dialects as they exist today, although the situation is apparently not as simple as has been previously supposed.[2] One probably would not want to deny that the initial influx of settlers from Southern Spain (i.e. Andalucía) into the Caribbean area shortly after Columbus' first voyage has had some influence on the Spanish spoken in this area today. The determination of the precise degree of importance of these early settlement patterns will be left to others. Another important factor which has had an impact on current dialect areas in the New World is the influence of the different indigenous peoples inhabiting these different areas of America from 1492 to date. The indigenous languages of America, e.g. Náhuatl in Mexico, Guaraní in Paraguay, Quechua in Bolivia and Peru, have had various degrees of influence, albeit mostly lexical, on the dialects of Spanish spoken in these areas.[3] Besides the indigenous languages of

America, the importation of various non-Hispanic peoples and technologies has also had an influence, again mostly lexical, on American-Spanish dialect areas.[4]

Although all these dialects and sub-dialects are a synchronic fact, very few have been described within any linguistic theory, and even fewer of them within the framework of generative grammar.

With regard to Cuban Spanish in particular, there are several partial dialect studies available, treating the speech of certain areas, e.g. the province of La Habana, but no complete phonological description has ever found its way into print.[5]

The situation with regard to Miami-Cuban Spanish (henceforth MCS) is even worse, since there is but a handful of studies ever done on MCS.[6]

Part of the purpose of this study will be to provide a partial phonological description of this dialect of Spanish spoken in the Miami, Florida area. The phonological description provided in this study will be only partial for two reasons: (1) it will describe only phonological processes that occur in rapid speech; (2) it will describe within the theory of generative grammar only some of the rapid speech phonological processes that occur in MCS that do not occur in the standard language. This is not to imply, however, that these phonological processes occur exclusively in MCS, as some or all of these individual processes have been reported in one or more other dialects of Spanish. These rapid speech phenomena will be discussed in Chapter Three of this dissertation.

The major contribution to Spanish Generative Phonology of Chapter Three is not that of simply presenting these data, as some or

all of them are known to those doing research in Cuban Spanish, but rather, that it will (1) present these rapid speech phenomena within the framework of generative theory; (2) show them in terms of frequency of occurrence (i.e. percentages of occurrence) rather than simply describing them as occurring "often, sometimes, frequently," etc. A secondary contribution of this study will be that it will present these rapid speech phonological processes, thereby providing a rather large and detailed body of data that others, not thoroughly familiar with MCS, may use for testing different aspects of universal phonological theory. It should be made clear, however, that it is not the purpose in the present study to provide a complete phonological description of MCS, but rather, as stated above, to account for a variety of rapid speech phonological phenomena that occur in this dialect that do not occur in the standard language.

The second major contribution that this study will make to Spanish generative phonology in particular, and to universal phonological theory in general, is that of discussing some of the theoretical implications that arise from these rapid speech phenomena. Obviously, since there have been no prior phonological studies done on MCS within the theoretical framework of generative grammar, there has been no research done on the theoretical implications that arise from these late phonological processes. These rapid speech phenomena will be discussed in Chapter Four as they relate to some current issues in generative phonological theory.

Chapter One of this study will discuss purposes and objectives, defining the MCS dialect area and rapid speech as they are understood herein, and will also discuss methodology used in the data gathering process.

Chapter Two will review, discuss, and provide a critical analysis of all available studies done on Cuban Spanish, MCS, and various other dialect areas that exhibit some of the phonological processes occurring in MCS.

The final portion of this study, Chapter Five, will provide a summary and conclusions relative to the material presented in previous chapters, and will offer some suggestions for further work that should be done on MCS phonology.

While this study deals only with certain synchronic phonological facts of MCS, since there is very little published research available on this dialect, there is an abundance of worthwhile projects that can and should be done on MCS. As mentioned above, further study could be undertaken on diachronic phonology and dialectology of Cuban Spanish and Miami-Cuban Spanish. There is a wealth of socio-linguistic research that could be done on MCS and the Spanish of the Tampa, Florida area. Tampa Spanish, which has a strong Cuban influence, is quite different from the Cuban Spanish spoken in Miami.[7] A comparison of the lexicology, syntax, and phonology of Tampa and Miami Spanish would appear to be a significant linguistic study. Also, in the Miami area, there is a sizeable number of bilingual Chinese (Chinese/Spanish), many of whom came to Havana after the communist rise to power in China. Many of these Chinese moved on to Miami after Castro's takeover in Cuba. These speakers would seem to provide a source of data for different types of linguistically significant studies. Besides phonological studies, the MCS dialect provides a good source for lexical and syntactic studies. There is an abundance of lexical material from MCS and Cuban Spanish which differ from standard Spanish, e.g. the lexical item <u>ahorita</u> does not mean 'now' or 'right now' as in standard Spanish,

but rather 'in a little while' in Cuban Spanish and in MCS. There are also syntactic characteristics peculiar to Cuban Spanish and MCS, e.g. ¿Qué tú haces? 'What are you doing?' is an acceptable surface level manifestation of standard Spanish ¿Qué haces tú? In standard Spanish, questions of the form *¿Qué tú haces? are ungrammatical.[8] There are also other ways in which the syntax of MCS differs from that of the standard language, some of which could have an influence on universal syntactic theory.

## 1.2 The Miami-Cuban Spanish Dialect Area

Throughout this study reference is made to the Miami-Cuban Spanish dialect. Rather than being limited only to Miami, this dialect encompasses the entire coast of southeast Florida. This southeastern coastal area is mainly comprised of Dade County, in which Miami is the principal city, Broward County, whose main city is Fort Lauderdale, and Palm Beach County, with West Palm Beach being its largest city. The vast majority of speakers of MCS, to be sure, reside in three main areas of Dade County. One of these main areas is the near southwest quadrant of the city of Miami. This section is known as the sagüesera [sagweséra], a Spanish phonological adaptation of the English word 'southwest,' with the addition of the Spanish suffix -era. The section of Miami known as "Little Havana" is found here in "la sagüesera," on and around Southwest Eighth Street.

Another principal area of concentration of speakers of MCS is the city of Hialeah, a northwestern suburb immediately bordering on the city of Miami.

The third area of concentration of speakers of MCS is the southwestern suburb of Westchester. There are, of course, other areas of

concentration of speakers of MCS in this three-county area, but none as large or as culturally dominating as these three areas.

The vast majority of the speakers of MCS who reside in this three-county area are, of course, recent immigrants, who have arrived sometime after 1959. Most speakers of MCS are, to varying degrees, bilingual. Some exhibit a nearly perfect command of both English and Spanish, most have some degree of ability to function in English (some of course with a good command of English, others with only a basic knowledge of English), and some have managed to remain almost completely monolingual speakers of Spanish. Speakers of MCS represent all possible professions, socio-economic levels, and educational levels. A large portion of the adults, at this time, have received some or most of their education in Cuba. Speakers of MCS come from all six Cuban provinces, and they represent various lengths of residence in the Miami area, some having been here for almost sixteen years, others having arrived only recently.

## 1.3 Methodology

The dialect of Spanish used in this study is that of twenty-one personal friends, associates, and colleagues of the writer. All of the data used in this study have been collected and recorded since February, 1975. All informants used in this study are native speakers of Cuban Spanish, who have resided principally in the Miami, Florida area since their arrival in this country, and who still use Spanish as their principal language. They represent various stages of bilingualism. They are all adult speakers, representing an age range of 20-55 years. Most are educated speakers, although many have received some or most of their education here in the United States. They represent five of the six Cuban provinces.[9]

The speech of the informants used in this study is believed to be typical of the Spanish spoken in what has been designated as the MCS dialect area.

It should be made clear, however, that while what is described in this study is felt to be typical MCS, the claim is not that MCS is Cuban Spanish. This may well be the case--this is an empirical question which only further research can determine. The limited number of informants used in this study (21) should also be kept in mind. Definitive and sweeping generalizations made in several recent studies done on Cuban Spanish, based on a small number of informants, merely begs the question. Until it can be shown that the limited number of informants used in any or all of these studies are truly representative of the Spanish spoken in Cuba, then this type of assumption can be little more than just that--an assumption.

Another point which should be made clear is that this study makes no direct attempt to determine the homogenity of the MCS dialect. It is intuitively felt, however, that the speech of the informants used in this study is typical of the MCS dialect area. The determination of the homogenity or stratification of the Miami-Cuban dialect of Spanish, albeit an important question, is beyond the scope of this study.

In collecting the data used in this study, only high-quality cassette recording equipment and tapes were used.

Since all the phonological processes which we present in Chapter Three, and the theoretical implications presented in Chapter Four are from rapid speech, all of the recorded data are taken from totally unstructured "free-speech" situations. These four "free-speech" recording sessions, in which most of the informants are personal friends of the writer, were done in a social atmosphere, wherein normal, everyday conversation was taking place.

In determining the frequency of occurrence of each of the surface level variants discussed in Chapter Three, it was necessary to make some arbitrary decisions. In section 3.5, where the frequency of occurrence of the three surface level manifestations of systematic /s/, i.e. [s], [h], or [ø] was being determined, arbitrary parameters had to be set up. In this section, as well as in all other sections, these somewhat arbitrary parameters were set up using what was considered, under the circumstances, the best possible linguistic judgement. Once these parameters had been established, care was taken to be consistent in all judgements, staying within these self-imposed parameters.

In the case of section 3.5, only [+strident] sibilants were considered as occurrences of [s]; only those surface manifestations of [s] that contained no spirant quality whatsoever were considered as occurrences of [ø]. Whatever was neither [s] nor [ø] had to be considered as phonetic occurrences [h] of systematic /s/.

Because of the arbitrary decisions involved in these frequency of occurrence determinations, the figures for percentage of occurrence must be considered as perhaps a first approximation. This is, as far as is known, the first attempt that has ever been made to ascertain this type of information. In some ways, because of the importance that these percentages potentially have on universal phonological theory, it is somewhat surprising that this type of research has never been previously undertaken, but considering the rather deplorable state of our knowledge of Spanish dialectology in general, nothing is really surprising. Only when others have undertaken the task of determining these frequency of occurrence percentages, thereby providing a larger source of data, will we have a more accurate knowledge of their reality.

## 1.4 A Definition of Rapid Speech

In demarcating different styles of speech, it was again obligatory to establish some more or less arbitrary parameters. It is necessary, nevertheless, to define these different styles of speech, particularly what is meant when referring to "rapid speech," in order to establish a framework for the discussion in Chapters Three and Four of this study.

In the area of Spanish phonological studies, Harris (1969) was, as far as can be determined, the first person to formalize different styles of speech, to give "an impressionistic description of a hierarchy of 'styles' of pronunciation in Spanish" (1969, p. 7). Harris (1969) gives the following parameters for the four different styles of speech he recognizes:

> Largo: very slow, deliberate, overprecise; typical of, for example, trying to communicate with a foreigner who has little competence in the language or correcting a misunderstanding over a bad telephone connection.
>
> Andante: moderately slow, careful, but natural; typical of, for example, delivering a lecture or teaching a class in a large hall without electronic amplification.
>
> Allegretto: moderately fast, casual, colloquial. In many situations one might easily alternate between andante and allegretto in mid-discourse or even in mid-sentence.
>
> Presto: very fast, completely unguarded.

Other Spanish phonologists have, of course, been aware of how different styles of speech affect surface phonetic forms. Navarro-Tomás (1965) makes repeated references to different speeds and levels of speech. Harris' treatment of these styles of speech is unique in that he actually formalizes them, not that he is the first to recognize the role they play in phonological processes.

Harris (1969, *ad passim*) suggests or implies that normal, rapid speech is represented by the styles he calls *allegretto* and *presto*. He suggests that "in many situations one might easily alternate between *andante* and *allegretto*" (1969, p. 7). It is suggested that, in normal colloquial speech, it is perhaps more normal to alternate between *allegretto* and *presto*.

In establishing parameters for a definition of rapid speech, Harris' definitions of his styles of *allegretto* and *presto* can almost, but not quite, be accepted. The following definition is offered as minimal parameters for what is referred to as "rapid speech" throughout this study:

> *Rapid Speech*: normal, fast, casual, unguarded colloquial speech, typical of any normal social situation.

This definition differs from Harris' styles of *allegretto* and *presto* in that it does not accept the slowest area of the *allegretto* style of speech, i.e. moderately fast. It might be said that the style of speech which is defined as "rapid speech" encompasses the upper-half of Harris' *allegretto* style, and of course *presto*. The parameters given in this definition are, of course, only the minimal parameters, i.e. it also allows speech faster than "normal"; it allows "completely unguarded speech," etc.

## NOTES

[1]See Lapesa (1959), Menéndez Pidal (1962), Entwistle (1938), etc.

[2]For example, see Almendros (1958) for an oversimplistic view. Although the question of the precise influence that these peninsular dialects may have had on current American-Spanish dialects is an interesting and important one, it properly belongs in the realm of diachronic Spanish dialectology, and therefore is not within the scope of this dissertation.

[3]See Buesa Oliver (1965), Tessen (1974), Boyd-Bowman (1960), etc.

[4]See Boyd-Bowman (1960), Grayson (1964), Hammond (1974), Navaez (1963), etc.

[5]These studies will be discussed in Chapter Two of this study.

[6]See Saciuk (1974), Hammond (1973), Resnick and Hammond (1973 and 1975), Hammond and Resnick (1974), Bjarkman (forthcoming), Fernández (1973), Bertot (1969). Also, Bohdan Saciuk has been working on an extensive and detailed study of the phonology of Miami-Cuban Spanish.

[7]Personal observation of the writer of this study, who was raised in the Tampa Spanish area.

[8]The example given here is not merely an isolated idiosyncratic occurrence of this phenomenon. This is a rather productive process with some verbs in the second-person singular form. Other common examples are: ¿Adónde tú vas?, 'Where are you going?'; ¿Qué tú crees?, 'What do you think?'; ¿Dónde tú vives?, 'Where do you live?'; ¿Qué tú miras?, 'What are you looking at?'. This process occurs primarily with the subject pronoun tú, less frequently with the pronoun usted or ustedes, and from time to time with the first-person pronouns. I cannot recall having ever heard this process with the other third-person pronouns, with any degree of regularity (i.e. él, ella, ellos, ellas). The precise constraints which apply to this process, i.e. with which verbs it may occur, with which WH-forms it may occur, and in what styles of speech it may occur, etc., would have to be confronted in such a study.

[9]Other background data relative to the twenty-one informants is given in section 3.2 of this study.

## CHAPTER TWO

## PREVIOUS RELEVANT SPANISH PHONOLOGICAL STUDIES

### 2.1 Spanish Generative Phonology

Although Harris (1969) described a sub-dialect of Mexican Spanish, it is perhaps appropriate to briefly discuss its impact on the present study. While he was directly describing only one dialect of American Spanish, he was also indirectly describing some phonological processes in all other dialects of Spanish; e.g., the phonological process of 'velar softening' is shown informally in Harris (1969, p. 71):

$$\begin{Bmatrix} k \\ g \end{Bmatrix} \rightarrow \begin{Bmatrix} s \\ x \end{Bmatrix} \quad / ___ \begin{bmatrix} -cons \\ -back \end{bmatrix}$$

The effect of this rule is to change systematic /k/ and /g/ to [s] and [x] respectively, before a front vowel.[1] This process of velar softening occurs in this same way in numerous other dialects of Spanish.[2] Thus, Harris (1969) also describes many phonological processes of MCS, e.g., his rule of 'spirantization' (rule 6.5(36), p. 187) in Mexican Spanish correctly describes this same process in MCS. It is therefore no coincidence that the late rapid speech phonetic processes described in Chapter Three of this study are processes not described in Harris (1969). To attempt to repeat the rules found in Harris (1969) that correctly describe phonological facts of MCS would be of little interest or value.

This study uses Harris (1969) as a starting point for the phonological processes described in Chapter Three, because of the belief that it is the first complete, reasonably accurate phonological description of any Spanish dialect ever described within the framework of generative grammar.[3]

While it is not the claim of this study to be providing a complete description of the phonology of MCS, if Halle (1962, p. 343) in discussing dialectology is correct in saying that "differences among grammars [i.e., dialects--R.M.H.] may be due to one or both of the following: (a) different grammars may contain different rules; (b) different grammars may have differently ordered rules," then it seems reasonable to assume that by incorporating Harris' (1969) rules that correctly describe phonological facts of MCS, by deleting those rules of Harris (1969) that do not apply to MCS, and by adding the phonological rules of MCS found in Chapter Three of this study, we would have a fairly complete phonological description of MCS. It perhaps should be clarified at this point that there is no implication here to suggest that Mexican Spanish, or any other dialect of Spanish be "converted" into MCS, i.e., that its phonetic representations be taken as the underlying representations of MCS, an approach espoused by some,[4] but rather that MCS and Mexican Spanish share some phonological rules, and that these rules shared by MCS and Mexican Spanish described in Harris (1969), along with the phonological rules found in Chapter Three of this study should provide a nearly complete phonological description of the phonological component of MCS.

## 2.2 Cuban Spanish

Although linguistically, politically, and socio-economically Cuba has been an important part of the Caribbean area for many years, there

is a relative paucity of studies done on the dialect of Spanish spoken on the island. Because of obvious political reasons, there have not been many dialect studies done in Cuba since 1959, but there remains a long period of time, between 1493 and 1958, during which such studies could have been carried out. The dearth of phonological studies done on Cuban Spanish is indicative of the rather poor state of the study of American-Spanish dialectology in general.

Of the studies done on Cuban Spanish, the majority are lexical in nature. The number of phonological studies done on Cuban Spanish is rather small, in relation to Cuba's linguistic importance in the Caribbean area, and more generally, in American-Spanish dialectology. Although there have been partial phonological studies done on different areas of Cuba, no complete phonological study of any Cuban Spanish dialect has ever been done. The following is a list of phonological or phonetic studies done on some aspect of Cuban Spanish:

I. Published materials on Cuban Spanish:

| | | |
|---|---|---|
| 1. | Almendros | 1958 |
| 2. | Bartoš | 1965 |
| 3. | Bartoš | 1966 |
| 4. | Bartoš | 1970 |
| 5. | Espinosa | 1935 |
| 6. | Haden and Matluck | 1973 and 1974 |
| 7. | Isbaşescu | 1968a |
| 8. | Isbaşescu | 1968b |
| 9. | López Morales | 1970 |
| 10. | Terrell | 1975a |
| 11. | Terrell | 1975b |
| 12. | Terrell | 1975c |
| 13. | Terrell | 1975d |
| 14. | Terrell | 1976a |
| 15. | Dihigo | 1916 |
| 16. | Montori | 1916 |
| 17. | Olmstead | 1954 |

II. M.A. and Ph.D. theses on Cuban Spanish:

| | | |
|---|---|---|
| 1. | Bertot | 1969 |
| 2. | Clegg | 1967 |

3. Guitart 1973
4. Lamb 1968
5. Sosa 1974
6. Vallejo-Claros 1970

III. Papers presented on Cuban Spanish:

1. Guitart 1974

IV. Unpublished studies on Cuban Spanish:

1. Terrell 1974a
2. Terrell 1974b

Because many of the above works are relatively unknown, they will be briefly discussed in the remainder of this section, with emphasis on the lesser known and more recent of these studies.

2.2.1 Published Materials on Cuban Spanish

In this section ten articles will be mentioned. Seven of these will be briefly summarized, with an emphasis on a discussion of the sections of each article that deals with the pronunciation of Cuban Spanish. The remaining three articles, because they either were published many years ago, or because of the paucity of phonetic material they contain, will only be briefly mentioned in the last part of this section.

2.2.1.1 Almendros (1958)

This article is a thirty-seven page study, of which only ten pages are devoted to the phonology of Cuban Spanish. The remainder of this article is devoted to other topics, such as the historical origin of Cuban Spanish, indigenous influences on Cuban Spanish, African influences on Cuban Spanish, etc. Lamb (1968) also contains a discussion of Almendros (1958) in Chapter Two. Although Almendros collected his data and wrote this article more than 20 years ago, when the linguistic situation may have been very different from now, nevertheless, one must

be somewhat suspicious of some of his conclusions, since he apparently relied to a certain extent on literary sources for some of his data, a point also brought out in Lamb (1968).

Almendros (1958) devotes two pages to the discussion of vowels, in which he mentions that vocalic segments in Cuban Spanish tend to be more open than in Castilian Spanish, and then he mentions the following phenomena:[5]

1. Change of /e/ to [i] /____ $\begin{bmatrix} V \\ -high \\ +stress \end{bmatrix}$

e.g., pasiar for pasear; golpió for golpeó; tiatro for teatro; siacabó for se acabó.

2. Simplification of two consecutive identical vowels, e.g., alcol for alcohol. It is doubtful that his process does not occur in all dialects of Spanish, at least in rapid speech.

3. Modification of certain stressed diphthongs, e.g., paine for peine; sais for seis. Almendros (1958, p. 145) explains that "the sound is not exactly reproduced as the vowel a, but rather more like a sound between a and e."

4. Apocope of unstressed final vowels, e.g., much$^{o}$; chic$^{o}$; noch$^{e}$; lluev$^{e}$; poc$^{o}$. Almendros (1958, p. 145) explains that these vowels are not completely apocopated, but that "some light traces of the vowel remain." He also notes that this process takes place especially "when the preceding consonant is voiceless." Apparently what Almendros observed here is a devoicing of this unstressed final vowel, which will be discussed in section 3.8 of the present study.

Almendros (1958) devotes eight pages of discussion to the consonants of Cuban Spanish. He discusses the following topics:

1. The relatively weak articulation of /ptkbdg/ in Cuban Spanish, especially of /d/ and /g/, which in intervocalic position almost disappear, but not completely.

2. The use of [h] instead of [x].

3. The archaic retention of [h] in some lexical items, e.g., juir for huír; jalar for halar.

4. The occurrence of seseo in Cuban Spanish.

5. The use of a pre-dorsal /s/ instead of the apical /s/ of Castillian Spanish.

6. The phonetic realization of /s/ as [s], [h], or [ø].

7. The phonetic manifestation of /s/ /____C being assimilated to the following consonant, e.g., il-la for isla; avip-pa for avispa.

8. In words ending in -ción or -sión, the /s/ → [š], due to the "palatalizing influence of the following [y]," e.g., atenshión [atenšyóŋ] for atención [atensyóŋ]; profeshión [profešyóŋ] for profesión [profesyóŋ]. I have never observed this phenomenon in MCS, nor can I find any native speakers of MCS who will admit to having heard [š] in this environment.

9. The assimilation of liquids to the consonant which follows them, e.g., canne for carne; aggo for algo; veddá for verdad; sevvilleta for servilleta; suéttame for suéltame. According to Almendros (1958), this assimilation of liquids is "what most decisively distinguishes the speech of Western Cuba from that of Eastern Cuba," taking place in the three western-most provinces of Pinar del Río, La Habana, and Matanzas.

10. In cases where /r/ is not assimilated to the following consonant, its pronunciation in word-final position is not clear and well-defined as in Spain, but as: "a.) a weakened sound;[6] b.) with a

very brief aspiration with nasal resonance (mejoñ, comeñ [for mejor, comer--R.M.H.]; c.) a sound intermediate between r and l por-l, conductor-l" (p. 150).

11. The occurrence of yeísmo in Cuban Spanish.

12. The phonetic manifestation of h, b and v as g, e.g., agora for ahora; gomitar for vomitar; cacagual for cacahual.

13. [ø] → [g] for the group hue, e.g., güevo [gwéβo] for huevo; güeco [gwéko] for hueco. Actually, what Almendros is showing here is consonantalization, i.e., the glide [w] → [$\overset{w}{g}$] / #____ (see Harris, 1969, p. 24).

14. The surface realization of palatal consonants as [ñ], e.g., ñato for chato; ñamar for llamar.

15. The pronunciation of rr /r̃/ much softer than in Spain.

16. "The x has a sound similar to that of the s" (p. 151).

17. A very brief mention of prothesis, epenthesis, aferesis, syncope, apocope, metathesis, assimilation, dissimilation, and the pronunciation of augmentative, diminutive, and deprecatory suffixes in Cuban Spanish.

One serious weakness in Almendros' (1958) presentation of the above phonetic data is that instead of giving phonetic transcription for his data, he resorts to what is evidently some type of compromise between spelling and phonetic transcription, thereby leaving the reader to either make assumptions, or at times, simply guess at what he is talking about.

2.2.1.2 Bartoš (1965)

In this six-page article, Bartoš presents a three-page discussion concerning various aspects of Cuban pronunciation and lexicology, with

emphasis on their causes, e.g., indigenous influences, African influences, Chinese influences, and other assorted influences. He briefly mentions the fact that the intonation of Cuban Spanish differs from that of the standard language, "perhaps because of the influence of the Blacks in Cuba" (p. 144).

Bartoš (1965) presents a page and one-half of phonetic transcription of two different passages, each shown in Castilian pronunciation and Cuban Spanish pronunciation.

In the remainder of this article, Bartoš discusses the following phenomena found in Cuban Spanish:

1. The cantique found in the intonation of the Cuban Spanish of the province of Oriente, i.e., the singing-like quality of this intonation.

2. The extraordinary rapidness of Cuban Speech, perhaps because of the "frequent laxing" of unstressed vowels. Bartoš suggests that this rapidity of speech brings about phonetic changes or modifications in the pronunciation of Cuban Spanish. It seems possible that the opposite is true, i.e., the phonetic modifications give an impression of rapidity to the uninitiated.

3. The occurrence of seseo in Cuban Spanish.

4. The occurrence of yeísmo in Cuban Spanish.

5. $/s/ \rightarrow \left\{\begin{matrix}h\\ \emptyset\end{matrix}\right\} ____ \left\{\begin{matrix}\#\\ \|\|\end{matrix}\right\}$ in Cuban Spanish.

6. /x/ → [h] in Cuban Spanish.

7. The existence of the following ordered rules in Cuban Spanish:

   a. $V \rightarrow \tilde{V} / ____ [n]\#$

   b. $[n] \rightarrow [\emptyset] / \tilde{V}____\#$

8. The simplification of consonant clusters in the pronunciation of Cuban Spanish.

It can be seen from the above items that this article presents a very limited amount of information on the phonology of Cuban Spanish, and what it does present is rather well-known to anyone with a limited knowledge of American-Spanish dialectology.

2.2.1.3 Bartoš (1966)

This article devotes about one page to a discussion of the pronunciation of the phoneme /b/ in Cuban Spanish. Bartoš states that during his stay in Cuba in 1961-62, he noted the occurrence of labiodental [v] in the speech of Cubans. On returning to Czechoslovakia, he made a study of the speech of two Cuban informants, aged 25 and 26 years, who were students there at that time. He observed the following:

1. X-ray photographs made by Bartoš show that the stop realization of /b/ is not limited to the environments of after a pause or after a nasal, but that [b] also occurs in intervocalic position in Cuban Spanish, or in environments before [y], e.g., labio [lábyo].

2. X-ray photography made of the lexical items vaya, vaga and óvalo show the following:

a. When /b/ occurred in word-initial position, for the grapheme v (vaya, vaga), this segment was realized as bilabial, but at the same time, the upper-front teeth lightly touched the lower lip, resulting in a bilabial-labiodental coarticulation, e.g., vaya [b̥ya].

b. In intervocalic position, the phoneme /b/, when representing the grapheme v (óvalo), was realized as a "purely labiodental" (p. 98) articulation. In MCS, the realization of /b/ as labiodental [v] occurred only in affected speech.

3. Bartoš notes that, because of the limited sampling used in this study, he cannot determine if the labiodental articulation [v] is in complementary distribution with the other surface manifestations of systematic /b/, or if [v] is merely in free-variation with these other phonetic realizations. He does conclude, however, that the situations concerning the articulation and distribution of the surface manifestations of systematic /b/ are different than as usually stated in often-cited pronunciation manuals for standard Spanish.

2.2.1.4 Bartoš (1970)

This short article (three pages) brings up several interesting aspects of the pronunciation of Cuban consonants. Some of Bartoš' findings in this article disagree with the findings of other authors who have written about Cuban Spanish. As interesting as some of his findings may be, Bartoš (1970) has one notable weakness, in that all of his conclusions are based on the speech of two educated subjects; "la pronunciation de deux sujets cubains appartenant à la classe instruite" (pp. 153-54).

Bartoš (1970) cites the need for the use of modern scientific methods in the study of dialectology, and he discusses the influence of the black and the indigenous substrata on the Spanish of Cuba. He also suggests that the articulatory changes which he cites in this study may lead to a "change in the articulatory system" of Cuban Spanish (p. 154).

Bartoš (1970) discusses the following phonetic data from Cuban Spanish:

1. The occurrence of seseo in Cuban Spanish.

2. The phonetic manifestation of the sibilant [s]. Bartoš cites Canfield (1962, pp. 79-80) as stating that the [s] of Cuban Spanish is a

dorso-alveolar articulation. Based on X-ray photography "radiofilms" of the speech of his two informants, Bartoš concludes that the [s] of Cuban Spanish, contrary to Canfield (1962) is articulated with the tip of the tongue against the alveolar ridge or against the posterior part of the upper incisors, "que la sifflante est prononcée avec la pointe de la langue s'appuyant contre les alvéoles ou contre la partie posterieure des incisives supérieures" (p. 154). Thus he concludes that the articulation of Cuban [s] is "apico-dental-alveolar." Bartoš also states that his X-ray films show the Cuban [s] to be grooved, rather than flat, "la forme du dos de la langue était légèrement concave" (p. 154).

3. The occurrence of yeísmo in Cuban Spanish. His X-ray photography shows no difference in pronunciation between the graphemes ll and y.

4. Systematic /x/ is realized phonetically as [h] in Cuban Spanish, rather than as [x] as in Castilian Spanish. Bartoš states, however, that the velar [x] is heard in Cuban Spanish "in proper names of Germanic origin" (p. 154).

5. The phonetic realizations of /b/ in Cuban Spanish. Bartoš states, again based on his X-ray photography, that the phonetic complementary distribution of the allophones [b] and [β] does not occur in Cuban Spanish as it does in European Spanish, i.e., [b] occurring after a pause or after a nasal; [β] occurring elsewhere. Bartoš (1970, pp. 154-55) states that the "stop allophone [b] is not limited to the environments of after a pause or after nasals, but that it is found also in other positions, even in intervocalic position," but he adds that "l'occlusion labiale n'est pas si forte et elle change selon les voyelles voisines" (p. 155).

6. The existence of [v] in Cuban Spanish. Bartoš states that his X-ray photography proves the existence of the labiodental [v] as a pronunciation for the grapheme v especially in word-initial and intervocalic environments. Bartoš says further that this labio-dental pronunciation is "rather widespread, and that it cannot be considered as a pronunciation of school masters."

7. The phonetic realizations of [ʎ]. Bartoš finds great articulatory variation in the pronunciation of this segment, and he states that "the dorsum of the tongue is clearly concave" in the articulation of this consonant, although Navarro-Tomás has stated that the back of the tongue is convex.

8. The stop consonants [t] and [d], usually dental in standard Spanish, are more nearly alveolar articulations in Cuban Spanish.

9. The occurrence of [ŋ] in Cuban Spanish, which, at the end of words, nazalizes the preceding vowel, "with a tendency for the nasal consonant to disappear."

10. Bartoš notes that Cuban pronunciation is characterized by a nasal quality.

The type of study presented here by Bartoš, using X-ray photography, is certainly to be commended. Much more research of this type needs to be carried out. It is unfortunate, however, that Bartoš used only two informants, a fact that somewhat diminishes the credibility of his findings. Bartoš also fails to state whether his two informants resided in Cuba or elsewhere.

2.2.1.5 Espinosa (1935)

In this article, Espinosa discusses the phonetic manifestations of several consonantal graphemes of Cuban Spanish. In discussing this

article, only those data of Espinosa that concern Cuban pronunciation will be discussed. One serious weakness of this study, also pointed out in Lamb (1968, pp. 13-14), is that Espinosa's observations do not appear to be based on any specific group of informants, but rather on the author's personal observations on Cuban Spanish, without regard to geographic area, socio-economic level, or educational level, as though Cuban Spanish were a highly homogeneous entity.

Espinosa provides the following observations about the pronunciation of Cuban Spanish:

1. The allophone [s] of /s/ in intervocalic environments. Espinosa describes [s] as a dental, rather than alveolar, sibilant. He also refers to [s] as "sonoro" (pp. 8-9). Although this word normally means 'voiced' in Spanish phonetics, one assumes he is using this term to refer to an impressionistic observation, in the more traditional use of "sonoro," meaning 'clear.'

Espinosa states that within a word /s/ → [h] / ____C. He states that this phonetic manifestation of s is similar to that of the grapheme j, "without arriving at being such a guttural sound" (p. 8).

Espinosa says that the phoneme /s/ at the end of a word is very weakened, with a marked tendency toward deletion.

2. /r/ → [h] / ____ [b g k l m n p], thereby leveling the phonemic distinction between /r/ and /s/ before these consonants, e.g., casco and cargo would both be pronounced [káhgo].[7]

3. Both /s/ and /r/ in preconsonantal position within a word may even become deleted.

4. [θ] has been lost in Cuban Spanish, although this pronunciation persists in the speech of Spaniards living in Cuba. In Cuban

Spanish this [θ] appears as [s h ø]. It is difficult to follow Espinosa's exposition, especially in this section, but he refers to the "phoneme" /z/ of peninsular Spanish, which he is apparently using as a symbol for [θ]: "el fonema 'z' se ha extinguido completamente en el habla criolla, a pesar de su persistencia sonora en la fonética de los españoles, que en gran número residen en el país" (p. 11).

5. /d/ has several different phonetic manifestations and has an effect on neighboring vowels.

/d/ → [ø] in word-final position, at least in everyday unaffected speech, in words stressed on this last syllable. Espinosa states that after the deletion of this word-final /d/, the preceding vowel becomes lengthened. If, however, this word-final /d/ is not deleted, part of the length of this preceding vowel is absorbed by the word-final /d/. Espinosa also states that "when the word is stressed on the penultimate syllable, the final 'e' is scarcely pronounced, after the 'd' is lost in pronunciation," e.g., césped (p. 13).

Espinosa states that there is a tendency for /d/ → [ø] / V____V. After deletion of this intervocalic /d/, the preceding vowel becomes strengthened, and the following vowel weakened if these vowels are not identical. "If these vowels are the same, e.g., nada, they fuse into one vowel, the word loses a syllable and the other sound becomes lengthened, i.e., [nā]" (p. 13).

6. "The phoneme of the letter j" (p. 14) has completely disappeared in word-final position in Cuban Spanish, but remains in word-medial position. Espinosa makes no mention of this "phoneme" in word-initial position, nor whether its allophonic manifestation is [x] or [h]. In this article, Espinosa makes repeated references (p. 14 and

ad passim) to a tendency of Spanish to delete, or rid itself of, the noun case-inflections of Latin, accounting for the tendency of Spanish in general, and in Cuban Spanish in particular, to delete word-final consonants.

7. The labio-dental [v] does not exist in Cuban Spanish, except in affected speech.

8. The graphemes b and v are phonologically leveled to /b/, with the stop allophone [b] occurring after the bi-labial nasal /m/, and the continuant [β] allophone generally occurring elsewhere.

9. The occurrence of yeísmo in Cuban Spanish.

10. The phoneme /l/ has the following allophonic manifestations:

a. /l/ → [l] / ____V

b. /l/ → [ø] / V____$, and this preceding vowel undergoes compensatory lengthening.

c. /l/ → [ø] / $\begin{bmatrix} V \\ -\text{stress} \end{bmatrix}$ ____#, e.g., mármol [mármo].

d. the confusion, of /l/ with /r/ in word-medial and word-final positions, and, less frequently, the confusion of the /r/ with /l/ in these same positions.

Following his discussion of the ten different items of pronunciation listed above, Espinosa mentions that the phonological environments of these different consonantal phonemes may also cause other allophonic manifestations. He then states that all of these phonological changes from standard Spanish to Cuban Spanish, e.g., /d/ → [ø] / ____#, show a tendency toward articulatory simplification, what is known as 'the principle of least effort.' Espinosa should have stopped at this point in his exposition. Although his observations are based, evidently on his own general impressions of Cuban pronunciation, and not on

a scientifically controlled body of data, his phonetic observations, and his observations about this articulatory principle of least effort are, for his time, quite commendable. He proceeds, unfortunately, to the following ad hoc observations as to the cause of this principle of least effort; "In that principle which is manifested in languages, but adquires alarming proportions in the Spanish spoken in Cuba, constantly reinforced by the great tendency toward laziness, which is innate in Cubans, perhaps because of determinate influences of climate" (p. 18).

Espinosa goes on to observe that these phonological changes (which proceed in the direction of least articulatory effort) do not affect word-final vowels, "which are always pronounced, although at times so lightly, that the ear of foreigners, although they know Spanish, does not perceive nor distinguish the clear [sonoras] blendings which differentiate a from o, nor e from i at the end of words" (p. 19). Apparently what Espinosa is saying is that although non-Cubans observe changes in the phonetic manifestations of word-final vowels, Cubans do not perceive these changes.

These types of statements on the part of Espinosa cast a severe shadow of doubt on the credibility of all his observations, since he is obviously capable of basing his judgement on what must be considered less than a pure scientific approach to the analysis of his data.

Aside from the ad hoc conclusions that Espinosa finds it necessary to draw after his presentation of his observations on Cuban Spanish, this article is interesting, because it shows that many traits of Cuban pronunciation, supposedly only very recent, have indeed been present for over forty years. Espinosa's article is written in such a way that it is quite difficult to read in some parts, and in other parts it is impossible to decipher the author's thoughts. One thing that makes this

article difficult to follow is that Espinosa either does not give examples of what he is discussing, or when he gives them, he does so with the spelling system of Spanish, completely avoiding the use of phonetic transcription.

2,2,1,6 Haden and Matluck (1973 and 1974)

These two articles will be discussed together since they deal with the same body of data, with Haden and Matluck (1974) being basically an English version of their 1973 Spanish article.

The data for these studies were gathered in Miami, Florida using recently arrived Cuban refugees from La Habana. The corpus of data collected consisted of 400 hours of speech, from 454 interviews involving 750 informants. According to the authors, the informants were all "professionals of one kind or another" (1974, p. 20). From these 400 hours of taped material, 100 hours were selected for analysis. The authors report that "Phonetic transcriptions were made from three-minute sections preselected from each of sixty of these" (1974, p. 20).

It should be pointed out here that the data used in this study were collected as part of a larger study, "a global research project sponsored by the Inter-American Program for Linguistics and Language Teaching" and entitled A Coordinated Study of the Linguistic Norms of the Principal Cities of Ibero-America and the Iberian Peninsula (1974, p. 20), and not specifically for Haden and Matluck (1973) or (1974). This same corpus of data has been used for many other recent studies done on Cuban Spanish, such as Vallejo-Claros (1970) and a number of Terrell's recent studies on Cuban Spanish.

The greater portion of Haden and Matluck (1973 and 1974) gives a detailed analysis of the suprasegmental phonology of Havana Spanish.

The following observations of interest to the present study, are offered by Haden and Matluck relative to the segmental phonology of Havana Spanish:

1. As is typical of Caribbean Spanish, the vowels of Havana Spanish are relatively stable, while the consonants show a much higher degree of variability.

2. Vowels in Havana Spanish weaken only in absolute-final environments. This weakening occurs most frequently in rapid, familiar speech. The authors report that this vocalic weakening is limited to /e/ and /o/, and occurs as a devoicing of these vowels, e.g., <u>campesino</u> [kampesíno̥], <u>mexicano</u> [mehikáno̥]. This phenomenon has, of course, been reported previously in most phonological studies on Cuban Spanish, but as usually occurring after palatal consonants, and not after /n/.

3. Haden and Matluck provide the well-worn hypothesis that the vowels in Havana Spanish "tend--very generally speaking, of course--to open somewhat in blocked syllables and to close slightly in free syllables, without regard, in either case, to the nature of the consonant that follows. . . . [the] phoneme regularly opens appreciably before a following /s/ which has been either aspirated or dropped, resulting thereby in a significant contrast between second and third-person verb forms" (1974, p. 21), e.g. , <u>ve</u> [be̥] vs. <u>ves</u> [be̥]. As has often been the case in the past with this often-repeated hypothesis, the authors offer no empirical evidence to support this theory. As has been reported in Hammond (1973), no evidence, either acoustic or perceptual, could be found in MCS to support such a theory.

4. Non-identical contiguous vowels are rigidly maintained, i.e., not weakened or reduced, except that there is a "slight tendency for the

/a/ to weaken in tension or be eliminated when followed by /e o/, especially so in proclitic position . . ." (1974, p. 21). The authors offer the following examples of this weakening of /a/: la enterrábamos [l$^{a}$enteɾ̃á$\not$amoh].

5. The authors report strong vowel nasalization in the Spanish of La Habana:

a. Before the velar nasal in absolute-final position, e.g., avión [a$\not$yõ$\eta$]; bien [by$\tilde{e}\eta$];

b. In syllable-final position before a nasal consonant followed by /s/, e.g., entonces [$^{e}$ntõse].

6. The Spanish of La Habana, like other Caribbean dialects is "Notorious among Hispanic phonological systems for the weakness in the muscular tension with which consonants are articulated, not only in final position, but in intervocalic position as well" (1974, p. 21).

7. Word-final /d/ is deleted with remarkable consistency, and intervocalic /bdg/ are often deleted in Havana Spanish.

8. Almost 100% lack of the voiced labio-dental fricative as an allophone of /b/, contrary to what was reported in Bartoš (1966) and Isbaşescu (1968b).

9. /s/ in intervocalic position is mentioned as a voiceless sibilant. In extremely rapid speech, however, "and in close proximity to other sibilants, it will at times be partially voiced " (1974, p. 22), e.g., ese sofrito [ésesofríto], where [s] represents a partially voiced alveolar sibilant.

10. In syllable-final position, followed by a consonant, /s/ appears phonetically as: [h] if the following consonant is voiceless, e.g., espera [ehpéra]; [ɦ] if the following consonant is voiced, e.g.,

mismo [míɦmo]; or [ø] in either case. Haden and Matluck generalize "that the faster the tempo of speech, the more frequently [ø] is heard" (1974, p. 22).

11. In word-final environments, followed by a vowel, /s/ appears as either [h], [ɦ], or [ø].

12. In absolute-final position [s], [h], [ɦ] and [ø] are in free variation as phonetic variants of /s/.

13. The authors report [f] as the only allophone of the phoneme /f/, and found no evidence of the voiceless bilabial spirant [ɸ], which, as reported in Chapter Three of the present study, does occur in MCS.

14. The phoneme /r/ between vowels and in consonant clusters of obstruent plus /r/, appears regularly as [r]. /r/ will rarely and sporadically appear as [ɹ] or [ø] in these environments in very rapid speech and in certain lexical items, e.g., para allá [payá].

15. In syllable-final and word-final environments, /r/ has the following allophones: [r], [r̆], [r̃], and [r̆ː] (a lengthened assibilated liquid). In syllable-final position, the allophone [r̆] appears most frequently. Haden and Matluck also report some occurrences of [ɮ], (which they describe as a voiced lateralized fricative), in syllable-final and phrase-final environments.

16. In absolute-final environments, the authors report the [r̆] allophone of /r/ predominates, sometimes devoicing and sometimes acquiring a nasal resonance.

17. The phoneme /r̃/ appears normally as [r̃] between vowels, sometimes devoicing. In initial position /r̃/ may appear as the flap [r] or may become devoiced, [r̥̃]. As will be shown later in Chapter Three of the present study, the [r] and [r̥̃] allophones of /r̃/ also occur in MCS rapid speech.

18. The nasal /n/ is always velar in phrase-final position, before any pause, and word-final followed by any vowel; Haden and Matluck, however, report that a nasal regularly assimilates to the place of articulation of a following consonant, as in standard dialects. Also, the authors report that /n/ is lost before /s/, "leaving traces of its nasality in the nasalization of the preceding vowel" (1974, p. 24), e.g., entonces [entõse].

2.2.1.7 Isbaşescu (1968a)

This publication gives a rather long detailed account of the Spanish spoken in Cuba. Isbaşescu's data is based on information obtained from six informants, who were students in Bucarest in 1964, when this study was done. These six informants ranged in age from twenty to thirty-two years of age at the time of the study. Three of these informants were from the Cuban province of La Habana; one was white, one black, and one mulatto. The remaining three informants were whites from the provinces of Matanzas, Camagüey, and Oriente. Isbaşescu had no informants from the Cuban provinces of Las Villas or Pinar del Río. The author provides no information as to how long these informants had lived outside of Cuba.

Lamb (1968) includes a summary of the data found in Isbaşescu (1965), which provides the corpus of data found in Isbaşescu (1968a). One of the negative aspects of Isbaşescu's data, also pointed out by Lamb, is that it makes sweeping generalizations about Cuban Spanish, based on a small sampling of data from informants representing four of the six provinces of Cuba.

Isbaşescu (1968a) contains approximately thirty-five pages of discussion of the pronunciation of Cuban Spanish, with ten pages devoted

to vocalic segments and twenty-five pages to consonants. Prior to this discussion, she provides background information concerning Cuban Spanish. The last half of this publication provides a sixty-seven page phonetic transcription of the author's interview with her six informants. Isbaşescu (1968a) will be discussed briefly below, limiting the discussion to her data on Cuban pronunciation, and largely to those points which are not already well-known about Cuban Spanish, or that are in disagreement with information provided by other sources.

In her discussion of the vocalic segments of Cuban Spanish, Isbaşescu provides the following information:

1. Contrary to other sources which report that the vowels of Cuban Spanish tend to be more open than those of standard Spanish, Isbaşescu reports that her data show that this "greater open quality of vowels is closely related to the position of the vowel within the word; i.e., that it occurs more frequently in word-medial vowels, especially in stressed ones, while unstressed vowels and vowels situated in word-final position, on the contrary, are characterized by an obvious closed quality" (p. 22).

2. The vocalic phoneme /a/ has two surface variants, [ạ] a palatal phone, and [ạ] a velar allophone. Isbaşescu found that in Cuban Spanish, there was no tendency toward phonemicization of these allophones.

3. /a/, as well as other vocalic phonemes, has a weakened variant, "which appears in weak position, conditioned by the accent of the word" (p. 22). This weakened variant occurs in word-initial position, hasta [$^{a}$ta]; within a word, especially when /a/ is in post-tonic position, platano [plát$^{a}$no], and most frequently in word-final

position, pasta [pást$^{a}$]. Isbaşescu also reports that at times this weakening of word-final /a/ causes a weakening in the entire final syllable, e.g., guanábana [gwanáβa$^{na}$], or this word-final /a/ may completely disappear, e.g., siembra [syémbr]. All of Isbaşescu's data on vowel weakening is, of course, contradictory to the information provided on vowels in Cuban Spanish by Espinosa (1935).

4. The vocalic phonemes /e o i/ each have two surface variants, [e̞ o̞ i̞] more open, and [e̝ o̝ i̝], more closed. Isbaşescu reports no phonemicization of these open and closed surface variants. (Hammond, 1973, showed that not only was there no difference of vowel quality, but that in syllable-final position within a word, vowel quantity and not quality had become phonemicized.) She also reports weakened variants of /e/ and /i/ in unstressed positions, and a weakened variant of /o/ only in word-final position.

5. The vocalic phoneme /u/, as reported by Isbaşescu, has only the allophone [u], and does not have the open and closed allophones that occur in the three [-low] vowels. /u/ is also reported to have a weakened variant, as was the case with all other vocalic phonemes, occurring in unstressed positions.

In her discussion of the pronunciation of the consonantal phonemes of Cuban Spanish, Isbaşescu (1968a) presents the following data:

1. The labio-dental [v], as an allophone for the phoneme /b/, was heard on occasion by Isbaşescu, but she reports that her investigations into this phenomenon "are still insufficient to allow us a deeper analysis of the problem" (p. 34). This problem is discussed in Isbaşescu (1968b).

2. The stop and fricative allophones [b] and [β] of the phoneme /b/ are not in complementary distribution in Cuban Spanish, but rather they are in free-variation.

3. /b/ may appear phonetically as [w], la boca [lawóka], Cuba [kúwa], pasaba [pasáwa], i.e., when /b/ appears within a word, or within syntactic units such as NP's; /b/ may appear as [w] / $____ [r], when the preceding syllable ends in /o/, e.g., sobre [sówre], pobre [pówre]; /b/ may also be deleted in intervocalic environments.

4. As was the case with /b/, Isbaşescu reports that the allophones [d] and [ð] of /d/ are not in complementary distribution in Cuban Spanish, but they are rather in free-variation. The author also reports the frequent loss of intervocalic /d/.

5. /k/ → [g] / V____V, e.g., la casa [lagása], Bacardí [bagardí]. Isbaşescu claims this process of lenition to occur only with /k/, but not with the other two voiceless stops /p t/, as reported in Saciuk (1974).

6. /k/ → [ø] when followed by a diphthong, e.g., cuando [wándo].

7. As was the case with /b/ and /d/ the stop and fricative variants of /g/ do not occur in complementary distribution but rather in free-variation.

8. /g/ → [ø] only rarely in intervocalic position, contrary to what has been reported by others.

9. /f/ may appear as [ø] intervocalically in word-initial position within a syntactic unit (such as an NP), e.g., otra forma [otra órma].

10. /h/ occurs in Cuban Spanish instead of /x/ of the standard language. The phoneme /h/ has a weakened variant, sometimes completely disappearing in intervocalic position, e.g., coge [kó$^{h}$e], mujer [muér].

Isbaşescu reports that /h/ may appear as [ɸ] in intervocalic position, e.g., frijoles [friɸóles].

11. In addition to the allophones [s h ø] of the phoneme /s/ usually reported for Cuban Spanish, the author states that /s/ [ɸ] / ____$ [d], e.g., pudiéramos decir [pudyéramo ɸesír]. Isbaşescu reports that when /s/ → [ø] within a word, this deletion may be "at times accompanied by a lengthening of the preceding vowel," e.g., esto [é:to] (p. 46), as was reported in Hammond (1973). Isbaşescu states, however, that this compensatory lengthening "is not produced in most cases" (p. 46).

12. [č] and [š] appear in free-variation as allophones of /č/, this variation being more likely to occur word-medially rather than word-initially.[8]

13. The allophones [y] and [ǰ] of the phoneme /y/ appear in free variation in Cuban Spanish, with [y] occurring more frequently.

14. The dorso-velar nasal consonant [ŋ] occurs very frequently in Cuban Spanish, and can be found in word-final position, followed by a word whose initial segment is a consonant, e.g., en película [ẽŋpelíkula], con jamón [kõŋhamṍŋ]; also [ŋ] occurs in absolute final position, e.g., bien [byẽ́ŋ], limon [limṍŋ]; [ŋ] is heard in word-final position when the next word begins with a vocalic segment, e.g., en agua [ẽŋáɸwa], son altos [sṍŋáltos].

15. /n/ may appear as a very weak articulation intervocalically, e.g., animal [aⁿimál], cuando nace [kwãⁿdoⁿáse], and /n/ may occasionally be deleted, e.g., de ninguna [deyⁿgúna]; word-final /n/ may also nasalize a preceding vowel and then be deleted, as shown in the following rules:

(a) V → $\tilde{V}$/____/n/

(b) /n/ → [ø]/$\tilde{V}$____

Rule (b) occurs after rule (a), in a natural feeding-order, with rule (b) applying only to the output of rule (a), e.g., con él [kõél], son unas [sõúnas]; Isbaşescu also reports that /n/ may infrequently appear as [l], e.g., ante [álte], limón [limól] (p. 51).

16. /r/ and /$\tilde{r}$/ do not occur in complementary distribution everywhere except in intervocalic position in Cuban Spanish, but rather in free-variation, including word-initial position, e.g., radio [$\tilde{r}$áɟyo], but recoge [rekóhe].

17. /$\tilde{r}$/ in Cuban Spanish is "generally much softer (más suave) . . . than in the Spanish of other regions, so that it almost never has more than two vibrations" (p. 52). The /$\tilde{r}$/ of standard Spanish has a minimum of three vibrations.

18. The assibilated [ř] appears in intervocalic position as a surface form of either /r/ or /$\tilde{r}$/. Isbaşescu also reports [ř] in word-initial position, e.g., refinada [řefináɟa] ~ [$\tilde{r}$efináɟa] (p. 53).

19. /r/ → [ø] /____#, e.g., azúcar [asúka]; /r/ → [ø] / ____$, porque [póke]; /r/ may also be deleted when it occurs within a syllable, e.g., trae [táe].

20. /r/ in syllable-final position may be assimilated to a following /n/, e.g., carne [kán$^{n}$e]; /r/ may be less frequently aspirated, e.g., transporte [t$^{h}$ã$^{nh}$pórte]; even less frequently, /r/ may become vocalized to [i], e.g., hacer grano [aséiɣráno].

21. /$\tilde{r}$/ → [kr] /#____, e.g., ropa [króp a], refresco [krefré$^{h}$ko] (p. 54).

22. The velar allophone /R/ was not observed in Isbaşescu's data.

23. /l/ may appear as [ø] both in syllable-final position and within a syllable, e.g., cualquier [kwakyér], planchar [pãⁿčár].

24. The neutralization of /r/ and /l/ occurs in all areas of Cuba. This neutralization takes place in word-final position, syllable-final position, within a syllable, and intervocalically. Both /r/ and /l/ may appear as [ɾ], [r], or [l]. Isbaşescu also reports that both /r/ and /l/ are pronounced successively in word-final position, e.g., ser [sérl], decir [desírl].

25. The archiphoneme resulting from the phonological neutralization of /l͡l/ and /y/ (yeísmo) has three allophones, occurring in free-variation: [l͡l], a palatal lateral; [y], a palatal fricative; [y̌], a palatal affricate, e.g., llamando [l͡lamándo]; llena [yéna]; gallo [gáy̌o]. All of Isbaşescu's examples contain ll in their spelling, and she does not discuss how words with y in their spelling, e.g., vaya, would be pronounced (p. 59). After approximately six years of constant contact with MCS, I can inequivocally state that I do not ever recall hearing a palatal lateral from any speaker of this dialect.

2.2.1.8 Isbaşescu (1968b)

This five-page article devotes three pages of discussion to the historical development of the sounds [b] and [v] in Spanish, and how the graphemes b and v are pronounced in different dialect areas of the Spanish-speaking world.

Isbaşescu reports that [v] appeared in the speech of all six of her informants (this article uses the same corpus of data as Isbaşescu, 1968a). Their labio-dental pronunciation generally corresponded to the grapheme v, but was also found corresponding to the grapheme b, e.g., resbala [re$^{h}$vála], se baila [seváyla]. Isbaşescu states that [b], [β],

and [v] occur in free-variation in Cuban Spanish, son viviendas [sõ̃ ˌβivyẽ̃ⁿdaʰ], vamos [ˌβámos], uva [úba], árbol [árbol], universidad [universidá], servir [servír], bueno [vwéno], voy [vóy].

Isbaşescu concludes that the graphemes b and v in Cuban Spanish may be realized phonetically as [b], [β], or [v], these three sounds being in absolute free-variation.

2.2.1.9 López Morales (1970)

In this book, López Morales devotes approximately twenty-eight pages to the pronunciation of Spanish in Cuba. Some of the data concerning Cuban pronunciation is the following:

1. In emphatic everyday speech, when /d/ has been deleted, the preceding vowel undergoes compensatory lengthening, e.g., cansado [kansá:o] (p. 109).

2. In careful pronunciation, /s/ is realized as a convex dorso-dental-alveolar segment, usually voiceless. Aspiration of /s/ occurs more frequently in Western Cuba, before any other segment. This aspiration of /s/ may be voiced before /b d g l n/. López Morales reports that /s/ → [ø] within a word is infrequent, "although at times the aspiration is difficult to perceive" (p. 110).

3. When /s/ → [ø] in word-final position, the more open quality of the preceding vowel is observed. As previously mentioned, it was shown in Hammond (1973) that in MCS there was no change involved in these vowels in word-final environments.

4. /l/ in word-final and syllable-final position is devoiced, but not deleted, e.g., cárcel [kárseḷ]; sol [sóḷ] (p. 111).

5. /r/ and /l/, in everyday speech in the cities, may be pronounced as a lax, voiceless apico-alveolar fricative. Likewise, /l/

may be produced as a voiceless nasal aspirate, e.g., papel [papeh̃]; sal [sah̃].

In everyday urban speech, /r/ is realized as a voiceless nasal aspirate, e.g., venir [benih̃]; comer [komeh̃].

6. /r/ in final position is usually produced as a fricative, either voiced or voiceless, with minimal tenseness.

7. The normal surface realization of /k/ in the group /kt/ is [g̊], e.g., doctor [dog̊tór]; carácter [karág̊ter]. "The realization [of /k/ in the cluster /kt/] as a voiceless stop is highly affected" (p. 111).

8. In everyday speech the cluster /rd/ is realized phonetically as [dd], with the /r/ devoicing and assimilating to the following /d/, e.g., verde [bédde]. This according to López Morales is the only frequent obstruent assimilation to a following consonant that occurs in Cuban Spanish.

9. [p̸], a bilabial voiceless fricative, occurs in Cuban Spanish as a free variant of the phoneme /f/, e.g., fiesta [p̸yésta]; fácil [p̸ásil]; fo [p̸ó].

10. When /s/ is realized as [s] its most common articulation is predorsal dental-alveolar, voiceless, with the body of the tongue convex.

11. /x/ is never realized as [x].

2.2.1.10 Terrell (1975a)

In this study, Terrell uses some of the same data which will be presented in Terrell (1974b) to support his proposal for a theory of how the study of the phonologies of different dialects should be approached. Since these data from Terrell (1974b) are discussed in section 2.2.4 of the present study, they will not be repeated here.

2.2.1.11 Terrell (1975b)

In this study, which uses Cuban Spanish as a data source, Terrell argues that there are functional constraints on word-final s deletion which are correlated with redundancy in surface structure. The data used in this study are some of the data which will be presented in Terrell (1974b), and since these are discussed in section 2.2.4 of the present study, they will not be repeated.

2.2.1.12 Terrell (1975c)

In this study, Terrell obtains his data from the tapes made for the "Proyecto del estudio coordinado de la norma lingüística culta de las principales ciudades de Hispanoamérica y de la Península Ibérica." The informants used in these interviews are all natives of the Cuban province of La Habana. Terrell (1975c), primarily a theoretical study, provides the data given below relative to nasals in Cuban Spanish.

In syllable-final environments within a word, nasal assimilation occurred 84% of the time, while nasal deletion with prior nasalization of the preceding vowel occurred 16% of the time, i.e., less than 1% of the time a velar nasal occurred in this environment.

In Chapter Three of the present study (Tables VIII and XI), nasal assimilation is reported 31.0% of the time, the velar nasal 42.2% of the time, and /VN/ ⇒ [$\tilde{V}$] 26.8% of the time in syllable-final environments.

The percentages reported by Terrell(1975c) and those reported in the present study for surface manifestations of nasals in syllable-final environments within a word are extremely different.

Likewise, if we compare the data given in these two studies for nasals in word-final environments within a breath-group, we again see radical differences in the percentages reported.

Terrell (1975c) reports the alveolar nasal occurring 3% of the time, nasal assimilation at a rate of 33%, the velar nasal 26% of the time, and /VN/ ⇒ [Ṽ] occurring 38% of the time--all in word-final environments within a breath-group.

In Chapter Three of the present study (Tables V and VII), the following percentages are reported in this same environment: nasal assimilation 3.4%, the velar nasal 62.9%, /VN/ ⇒ [Ṽ] 33.7%.

There are a number of variables that could account for the differences in the percentages given in these two studies, e.g., interview environment, age, type of interviews, etc. Also, as discussed in section 3.3 of the present study, it is often extremely difficult to distinguish nasalized vowels from velar nasals.

It should be pointed out, however, that the percentages for phonetic occurrence of the velar nasal reported in Terrell (1975c) (26% in the environment /____#_ and 0% in the environment /____$), especially his syllable-final percentage, differ radically, with the exception of Haden and Matluck (1973 and 1974), with every other study done on Cuban Spanish, e.g., Guitart (1973), Isbaşescu (1968a), etc. Also, the citing in Terrell (1975c) of less than 1% occurrence of the velar nasal in syllable-final environments is intuitively unacceptable with my own personal experience with Cuban Spanish and MCS.

Regarding deletion of the nasal in syllable-final environments, Terrell (1975c) offers the following data: nasal deletion occurred 71% of the time before voiceless fricatives /f s x/, 10% of the time before the voiced fricatives [β̞ ð̞ ɣ̞], and 2% of the time before the voiceless stops and affricates /p t k č/. Terrell makes the point here that nasal deletion "follows a scale of consonantal occlusion" (1975c, p. 8).

In word-final environments before consonants, Terrell (1975c) reports nasal assimilation or alveolar [n] occurring 60% of the time, the velar nasal 1% of the time, and nasal consonant deletion 39% of the time. In word-final environments before vowels, Terrell's data show nasal assimilation or alveolar [n] as occurring at a rate of 3%, the velar nasal 59%, and nasal consonant deletion 38%. In word-final position, Terrell reports that nasal assimilation of the alveolar [n] occurs at a rate of 8%, the velar nasal at a rate of 54%, and nasal consonant deletion at a rate of 38%.

Terrell observes that "The most striking thing about these data is the fact that in word-final position, velarization occurs before vowels and before pauses with the same frequency as nasal assimilation before consonants" (1975c, p. 8).

2.2.1.13 Terrell (1975d)

In this study, Terrell uses data from Cuban Spanish in an effort to argue for the superiority of natural generative phonology over what he calls abstract generative phonology, i.e., the standard generative model. This study, however, is largely theoretical in nature. What data that are presented from Cuban Spanish will be given in Terrell (1974b). These data are discussed in section 2.2.4 of the present study.

2.2.1.14 Terrell (1976a)

This study summarizes some of the findings in Terrell's earlier studies relative to different factors affecting s deletion in word-final environments in Cuban and Puerto Rican Spanish.

The data from Cuban Spanish given in this article are presented in Terrell (1974a) and (1974b). Since these data are discussed in section 2.2.4 of the present study, they will not be repeated here.

2.2.1.15 Other Published Materials on Cuban Spanish

In this section, three articles will be very briefly discussed, two of them because they were published many years ago, Dihigo (1916) and Montori (1916), and contain very little information about the pronunciation of Cuban Spanish, and the third, Olmstead (1954), because it only contains one item relevant to the present study. All three of these articles are also discussed in Lamb (1968).

Dihigo (1916) reports the following data on the pronunciation of Cuban Spanish:

1. /b/ → [g] / ___ $\begin{bmatrix} V \\ -low \\ +back \end{bmatrix}$ , e.g., abuela [agwéla]; volver [golvér]

2. /s/ → [n], e.g., resfriado [renfryáđo]; [r], e.g., las [lar]; [i], las [lai]; [ø], historia [itórya].

3. /k/ → [r], e.g., contracto [kontrárto].

4. /d/ → [l], [r] or [ø], e.g., admirar [almirár]; periódico [peryórico]; miedo [myéo].

5. /f/ → [x], fecha [xéča].

6. /g/ → [x], e.g., agujero [axuxéro].

7. /l/ → [i], e.g., vuelvo [bwéiđo].

8. /n/ → [r] or [l], e.g., conmigo [kormígo] and [kolmígo].

9. /r/ → [n], [s] or [i], e.g., virgen [bínxen]; carne [kásne]; cuerpo [kwéipo].

10. The following instances of vowel raising: /a/ → [e], e.g., astilla [estíya]; /a/ → [u], e.g., trancada [trunkáđa]; /e/ → [i],

e.g., peor [pyor]; /e/ → [u], e.g., terrón [turõn]; /o/ → [u], e.g., con [kum].

11. The following instance of vowel lowering: /i/ → [e], e.g., mismo [mémo].

12. The following example of vowel fronting: /o/ → [e], e.g., somos [sémos].

Dihigo's study, as was the case with Espinosa (1935), was apparently based on the author's general observations about Cuban Spanish, and not on any scientifically controlled body of data. It is unclear as to whether his data is supposed to be representative of normal Cuban speech, low class speech, etc. The phonetic transcriptions provided above are my interpretation of Dihigo's graphemic representations of my understanding of his data, as his work was without phonetic transcription. It should be mentioned, however, that if the processes described above (numbers 1-12) from Dihigo were phonological processes of Cuban Spanish in 1916, they are not phonological processes of MCS now. While it must be admitted that items such as (1), parts of (10), (11), and (12) may rarely be heard in MCS today, other processes such as (2) through (9) can only be described as ludicrous for MCS speech, as spoken by any normal member of this dialect area.

Montori (1916) contains only little more than a page of text devoted to Cuban pronunciation, and Montori took all the data he discusses directly from Dihigo (1916). Therefore, no further discussion of Montori (1916) will be given here.

Olmstead (1954) is a two-page article about several aspects of pronunciation found in the Spanish spoken in Regla, Cuba. He presents one observation relevant to the present study: /s/ → [s h ø]/____C.

When /s/ → [Ø] /____C, there is a compensatory lengthening of the vowel preceding this deleted segment.

2.2.2 M.A. and Ph.D. Theses on Cuban Spanish

In this section two M.A. theses and four Ph.D. dissertations done on Cuban Spanish will be discussed. The greater part of the discussion will be devoted to Lamb (1968), because this study contains by far the largest and most detailed discussion concerning the pronunciation of Cuban Spanish. Only those phonological or phonetic observations not discussed in Lamb (1968) will be mentioned in discussing the remaining five works. Of these five, Guitart (1973) contains the greatest amount of data not discussed in Lamb's work. It should be pointed out, however, that in most of these studies, the primary purpose of the author was not that of presenting data, but rather, discussing theoretical implications, lexical data, or sociological occurrences of the data presented.

2.2.2.1 Bertot (1969)

This thesis is primarily a listing of the allophonic manifestations, along with their environments, of the vocalic and consonantal phonemes of Cuban Spanish. Bertot also discusses how these allophones differ in these environments from the allophones of standard Spanish in the same environments. Bertot (1969) also includes some discussion of the historical background of Cuban Spanish, and a brief discussion of dialectical differences among her informants, and how the allophonic distributions of her data correlate with the findings on Cuban Spanish later included in Resnick (1975).

2.2.2.2 Clegg (1967)

This short M.A. thesis contains one and one-half pages of text and five pages of tables. In this study Clegg used as data the spontaneous speech of one 59-year-old female informant from Havana, Cuba. This informant had completed secondary education and had lived in the United States for four years. From a corpus of more than one hundred items, Clegg chose forty-five for the spectrographic analysis. The author analyzed and compared the first and second formant frequencies of the vowels /a o e/ in stressed position, unstressed position, and in unstressed position before /s/ → [h]. In all cases, this /s/ [h] was the plural morpheme on a noun or adjetive.

The only significant difference reported by the author was that the average frequency of the first format for the vowel /a/ followed by /s/ → [h] was 156 cps lower than the first formant of /a/ in unstressed position, and 172 cps lower than that of /a/ in stressed position. Based on these data, the author draws the following conclusion: "The contrast of frequencies puts /a/ in final position in plurals in a unique situation comparable with the middle frequencies of /e/ and /o/; together with this articulatory closed quality, palatalization--typical of other Spanish dialect areas--is minimal here" (p. 12).

2.2.2.3 Guitart (1973)

This Ph.D. dissertation, which is primarily theoretical in nature, devotes one chapter to a description of the phonetic manifestations of the writer's native dialect, the Educated Spanish of Havana (ESH). The author describes ESH as a dialect whose "speakers can be characterized as university educated and belonging to the middle or upper-middle class" (p. 40). Guitart states that although he and

other Cubans who speak ESH, whose speech the author's observations are based on, have lived in the United States for at least five years, "none shows in his Spanish any noticeable phonological influence from English" (p. 69). He notes that all these speakers are more or less fluent in English.

In discussing Guitart (1973), only those observations of the author that are unique or that differ with other sources will be discussed, i.e., such items as seseo, yeísmo, or deletion of /d/ in past-participles will not be mentioned. With this limitation in mind, Guitart (1973) presents the following data relevant to the pronunciation of ESH:

1. [s] is a dorsoalveolar articulation, with the tongue convex.

2. /s/ is frequently aspirated in syllable-final position, and is frequently deleted in utterance-final position, but /s/ is never realized as [ø] within an utterance, e.g., esto [éhto]; hoy es lunes [oyéhlúne]; estas cosas [ehtahkósa], but never [ehtakósa] or [etakósa] "although these are common in less prestigious dialects" (p. 43).

3. There is no voicing assimilation of /s/ (whenever /s/ is not realized as [h]) when it is followed by a [+voice] segment, e.g., asma [ásma] and not [ázma].

4. All utterance-final nasals are realized as [ŋ].

5. [h] is the surface realization of the voiceless velar fricative [x] found in other dialects.

6. ESH does not show word-final /r/-/l/ confusion, "which on the other hand, is a common phenomenon in the speech of poor Cuban blacks and of other lower socio-economic groups" (p. 43).

7. "The vowels of Cuban Spanish seem to be more open than those of other Spanish dialects" (p. 44).

8. Frequently $/^{e}_{\text{-stress}}/ \rightarrow [y] / ___ \begin{bmatrix} V \\ \text{-high} \end{bmatrix}$ in normal conversation within a word and across morpheme boundaries, but only in some words and never in others, e.g., pasear [pasyár], but león [león] and never [lyón].

9. More generally $/^{o}_{\text{-stress}}/ \rightarrow [w] / ___ \begin{bmatrix} V \\ \text{-high} \end{bmatrix}$, e.g., toalla [twáya]; cohete [kwéte].

10. /N/ in ESH appears as [ŋ] before dental, alveolar, alveo-palatal, and velar consonants, while a velarized labial nasal occurs before labial and labio-dental consonants, e.g., un boleto [uŋ$^{m}$boléto]; un francés [uŋ$^{m}$fransés]; un domingo [uŋdomíŋgo]; un señor [uŋseñór]; un chiste [uŋčíste]; un caballo [uŋkaβáyo]. This surface manifestation of nasals before other consonants is, of course, very different from the standard language, where nasals before other consonants are homorganic. Guitart observes that "one of the characteristics of ESH is a strong tendency toward velarization" (p. 47).

11. /a/ → [∅] /____#V, e.g., una islita [unihlíta].

12. The stop and continuant allophones of /b d g/ are in free-variation in ESH, whereas in other dialect areas of Spanish they are in complementary distribution.

13. In careful speech in ESH, the voiceless-voiced/stop-continuant oppositions are neutralized in closed syllable-final position, both within and across morpheme boundaries, i.e., /B/ may appear as [p ~ b ~ β]; /D/ may appear as [t ~ d ~ ð]; /G/ may appear as [k ~ g ~ ɣ]. /B D G/ are labial, dental, and velar archiphonemes

respectively, e.g., absoluto may appear as [apsolúto] ~ [absolúto] ~ [aɸsolúto]; apto may appear as [ápto] ~ [ábto] ~ [aɸto].

14. In rapid speech in ESH, the tendency toward velarization becomes active, and only /G/ appears. Guitart provides the following examples:

| | |
|---|---|
| absoluto | [aksolúto] |
| eclipsar | [ekliɣsár] |
| étnico | [éɣniko] |
| admitir | [aɣmitír] |

15. The neutralization of the liquids /r/ and /l/ occurs in ESH in closed syllable position before certain consonants in the following manner in colloquial speech:

a. The systematic phonemes /l/, an apico-dental lateral, and /r/, an apico-alveolar flap, are realized as such in prevocalic, intervocalic, and utterance-final positions. /l/ and /r/ "maintain their identity before other liquids, dorso-alveolar [s], and alveo-palatal and palatal obstruents," with both /r/ and /l/" being dorso alveolar before [s], and /l/ assimilating its point of articulation to the consonant that follows but remaining a lateral"(pp. 50-51).

b. Both /r/ and /l/ become unreleased, voiced dorsoalveolar stops before dentals and alveolars other than [s].

c. Dental and alveolar consonants (except [s]) following /r/ or /l/ are affected as follows:

(1) Apico dental segments ([t ɸ]) are realized as dorso-palatoalveolar, both being realized always as a stop, e.g., arde [ád̻de]; arte [ád̻te]; saldo [sád̻do]; alto [ád̻to] (following Guitart, [d̻] symbolizes an unreleased voiced dorsopalatoalveolar stop).

(2) The apico-alveolar nasal is realized as a dorso-palatoalveolar nasal, e.g., carne [kád̻̈ n̻̈e].

d. Before labial and velar obstruents, /r/ and /l/ assimilate in point and manner of articulation to these consonants, e.g., el pomo [eb̻ pómo]; el verde [eb̻ bed̻̈ d̻̈e]; ser padre [seb̻ pá∂re]; ser bueno [seb̻ bwéno]; el caso [eg̻ káso]; el golpe [eg̻ gob̻ pe]; orgaídea [og̻ kídya]; organizar [og̻ ganisár]. As shown by the above examples given by Guitart, in each case /r/ and /l/ is realized as an unreleased voiced stop, and if the following velar or labial segment is voiced it is realized as a stop rather than as a continuant.

e. When /r/ or /l/ occur before [m ñ f h], true gemination occurs, e.g., el medio [emmé∂yo]; el ñame [eññáme]; ser mejor [sémmehór]; comer ñame [koméññáme]; el frente [effrénte]; ser fino [séffíno]; el jamón [ehhamón]; dar jamón [dáhhamón].

16. A velar glide is commonly substituted for [ɣ] after a back vowel, e.g., Cuba [kúwa]; la boca [lawóka]; sobre [sówre].

17. In rapid speech, the sequence [ɣw] may be frequently reduced to [w], e.g., abuela [awéla].

2.2.2.4 Lamb (1968)

This dissertation contains 126 pages of text, which is followed by thirty pages of a sample transcription of the interview made with one of Lamb's informants used in this study.

The data and findings presented in Lamb (1968) are based on interviews with thirty informants, all residents of the United States at the time he did this study, ranging in age from 21 to 54 years, most (11) in the age range of 40-48 years, the median age of Lamb's informants being 40 years; their average age 39 years. The range of residence in the

United States of Lamb's informants was from three months to seven years, their average being three and one-third years. Lamb's informants seem to encompass a good sampling of the average white middle socio-economic and educational class of Havana Cubans.[9]

Chapter One of Lamb (1968) gives introductory information as to the intention and scope of this study, along with a description of the sections of Havana where Lamb's informants formerly resided. Contrary to Bartoš' (1970) findings showing that labio-dental [v] was used in Cuban-Spanish for the grapheme v, especially in word-initial and inter-vocalic position, Lamb (1968) states that the labio-dental pronunciation "is done indiscriminately whether the spelling requires a b or a v, which certainly in a chronic sense reaffirms, contrary to the intention, the current indistinguishability of these two signs" (p. 8).

In Chapter Two, Lamb gives some historical background information on Cuba, and he then discusses all previous work done on Cuban Spanish, with, of course, emphasis on those studies relating to Cuban Spanish phonology. Lamb cites the following six studies as having to do with Cuban phonology or pronunciation (p. 13):

1. Almendros 1958
2. Dihigo 1916
3. Espinosa 1935
4. Isbaşescu 1965
5. Montori 1916
6. Olmstead 1954

Almendros (1958), Espinosa (1935), and Isbaşescu (1968a)(which contains the 1965 article) are discussed in section 2.2.1 of this study. The remaining three articles, Dihigo (1916), Montori (1916), and

Olmstead (1954) are only briefly mentioned in section 2.2.1.5, because of a basic agreement with Lamb that they contain only a small amount of phonetic material, and are of little interest from the point of view of a phonological study.

Chapter Three of Lamb (1968) discusses the methodology used by the author in his data collecting process, and then lists important statistical data about his thirty informants.

In Chapter Four Lamb (1968) discusses the segmental and non-segmental taxonomic phonemes of Cuban Spanish. He lists 18 non-syllabic and five syllabic segmental taxonomic phonemes. Lamb carefully discusses each of the 23 segmental taxonomic phonemes, giving a statement as to the articulatory correlates of each, and the distribution of the different allophone(s) of each.

Contrary to Bartoš (1970), Lamb states that the taxonomic phoneme /d/ is "usually dental" (p. 46).

In discussing /ptk/, Lamb makes no mention of these segments ever becoming voiced in intervocalic position in rapid speech, as was first reported in Saciuk (1974).[10] Curiously, however, in the sample transcription of the interview with one of his informants, Lamb transcribes this informant's response to a drawing from PLIM, 'leña haciendo candela,' as [lẽña asyéndo ɡandéla] (p. 129), instead of the expected [lẽña asyéndo kandéla], clearly showing a /k/ → [ɡ] / V____V. Even more interestingly, later in Chapter Four, Lamb (1968, p. 79) actually states that "/k/ was not heard to have an alternate [ɡ], as stated in the Isbaşescu article."

Lamb (1968) lists /x/ as a taxonomic phoneme of Cuban Spanish, and neither in this chapter, nor in the following chapter on phonetic

variation, does he list [h] as an allophone of /x/. The Cubans I have been associated with, some having lived in this country for many years, others being recent arrivals from Cuba, simply do not use [x] as a regular part of their phonetic inventory, but rather, they use [h]. I find no reason, for MCS at least, to include /x/ as a systematic phoneme. To do so, would require a rule of absolute neutralization of the type /x/ ⟶ [h] in all environments, a type of rule not espoused any longer by many generative phonologists.[11]

Lamb's discussion of the nasal phonemes /m n ñ/ does not agree with what is currently observed in MCS. This disparity may reflect a difference in the phonologies of MCS and Cuban Spanish, but most likely, it was already taking place in Cuban Spanish, when Lamb collected his data, presumably around 1966-67. Lamb states that [ŋ] is, "a velar articulation occurring before velar non-syllabics and in final position whenever, across word boundaries, it anticipates either a following velar non-syllabic or a tonic syllabic" (p. 49). A discussion of the surface level manifestations of [ŋ] in MCS is given in section 3.3 of the present study.

The remainder of Chapter Three of Lamb (1968) discusses the structure of the syllable in Cuban Spanish, i.e., in what possible combinations, and where in the syllable, these 23 taxonomic phonemes may occur, and the prosodic features of Cuban Spanish. In his discussion of sequences of the same syllabic (pp. 63-64), Lamb makes the rather curious statement that "rapid speech, however, <u>on occasion</u> causes a reduction to one syllabic" [emphasis mine]. Apparently, from this, we are to presume that in rapid speech, it is not only possible, but more frequent, to have two contiguous identical vowels pronounced as two

units, rather than as one. This type of presumption, however, can only be erroneous, since the simplification of two identical contiguous vowels is a normal process of all unaffected speech, and the only possibility in rapid speech.

In his discussion of phonetic variations in Chapter Five, Lamb discusses "the phonetic variation observed in the entire corpus of the data, of the performances of all the informants including individual differences . . . given in generally descending order of frequency observed" (p. 72).

In his discussion of the occurrence of the fricative allophone [β], Lamb mentions the occurrence of [β] in his data in the environments h_____ [ syllabic] and m#_____r, rather than the standard [b] usually found in the latter of these environments. Lamb reports, contrary to Bartoš (1970) and Isbaşescu's (1968) findings, "no instance of the reverse phenomenon: occlusion of the normally fricative [β]."

Lamb (1968) devotes, of course, a great deal of discussion to the allophones of Cuban Spanish found in most of the literature, and these will not be repeated here.

Lamb (p. 76) mentions that word-final d, in addition to its usual allophone [ð], is sometimes realized phonetically as [h], e.g., pared [parẽh], and also as [Ø], although he attributes the latter to being "more limited to the low cultural level."

Contrary to what is common in MCS, Lamb found that the [š̆] allophone of /č̆/ "occurred predominately with women informants" (p. 79). In MCS, [š̆] as a surface manifestation of systematic /č̆/ is common in both sexes. The phonetic realizations of the systematic /č̆/ are discussed in section 3.7 of the present study.

In his discussion of the allophones (pp. 81-82), [s], [h], and [ø] of /s/, Lamb's data support the findings in Hammond (1973) that /s/ → [ø] /____$ within a word, contrary to the findings of others, e.g., Bertot (1969, p. 9). Contrary to the findings of Hammond (1973), Olmstead (1954), and Rosario (1956), which all report a compensatory lengthening of vowels before /s/ → [ø]____$ within a word, Lamb reports that he did not "observe any consistent effect on the remaining syllabic. . . . with no alternation of the final syllabic's quality" (p. 83). Lamb, however, is referring to vowels before deleted /s/ in word-final position. He apparently did not consider distinguishing those vowels before deleted /s/ in syllable-final position within a word from those in word-final position.

Lamb's findings (p. 84) concur with the findings of this study on MCS that voicing assimilation of /s/ before voiced consonants does not occur in Cuban Spanish or MCS.

Lamb (1968) reports the following surface manifestation of systematic /r/:

1. Evidence of devoicing in word-final position, e.g., vivir [biβíɾ̥].

2. [r̃] in utterance-final position in emphatic speech, although "this was a rare occurrence among my informants" (p. 88), e.g., comer [komẽr̃].

3. [h] before another non-syllabic, usually when this non-syllabic is a stop, e.g., porque [póhke].

4. Before another non-syllabic, there occurred less frequently than [h], "an assimilation to the following non-syllabic resulting in a double non-syllabic" (p. 88), e.g., acuerdo [akwéddo]; cerca [sékka]; carne [kánne].

5. The coarticulation of [l] and [r], giving a lateral flap [ɬ], e.g., tuerto [twéɬto].

6. A substitution of [l] for [r], e.g., garganta [galgánta]

7. When /t/ or /d/ follows /r/, the liquid may be articulated as a partial flap, with the tongue striking, and then being held against the alveolar ridge, continuing then to the articulation of the following /t/ or /d/, e.g., cerdo [séḍ̟ḍo]; sarta [sáṭ̟ṭa] (the raised /ṭ/ and /ḍ/ represent the partial flap, and as shown in the transcription, the following non-syllabic is slightly backed, from dental to alveolar position).

8. /r/ may appear as [l] in absolute final position. The phoneme /r̃/ in Lamb's data may sometimes appear less tense than the normal trill, sometimes approaching a voiceless apico-alveolar fricative in rapid speech.

Lamb reports (p. 91) that "assimilation of /n/ before bilabials /p b/ is observed with good consistency" in the case of the indefinite article un.

/n/ in final position may be weakly articulated, or deleted, nasalizing the preceding vowel, e.g., un dedo [ṹdé̞o].

Lamb reports that /l/ may alternate with /r/, e.g., sol [sór], and as in the case of /r/, it may assimilate to a following non-syllabic, e.g., olvido [obbíḍo]; Alberto [abbétto]. He also found final /l/ to be weakened, and infrequently deleted, e.g., tal [tá].

In his discussion of vocalic segments, Lamb discusses eleven allophones of the standard five vowel phonemes: /i e a o u/. Each of them has an open and close allophone; /a/ has three allophonic manifestations, [a] a central phone, [a] a more-forward prepalatal

articulation and [a→] a more-back, velar allophone. Lamb gives the following distribution of these vocalic allophones:

1. /i/ → [i̬] /__/m n/ in pretonic position, and sometimes before /r/, except after /p t/, or after another syllabic. [i] occurs elsewhere.

2. /u/ → [u̬] before a non-syllabic within a closed syllable, e.g., pulpo [púlpo], "but even more noticeably when in the same environment and between secondary and primary stresses: conductor [konduktór]" (p. 95). [u] occurs elsewhere.

3. /e/ → [e̬] before /r r̃/; before any [-syllabic] segment in a closed syllable; in atonic positions; in /i e/ diphthongs before /n m l t/; before another [+syllabic] segment /____ [t], e.g., cohete [koe̬te]; before /d/ in a closed syllable, e.g., sed [se̬d].

[e] and [e̤] occur in free-variation in certain environments before /s/ and /t/, although Lamb's explanation of these environments is somewhat less than lucid (p. 96). [e] occurs elsewhere.

4. /o/ → [o̬] /____/y č ñ/; in all closed syllables except before /l/. [o] occurs elsewhere.

Lamb states the final (unstressed ?) /o/ can be weak, and change timbre to [u], most frequently after palatals, e.g., serrucho [seřúču]; cuello [kwéyu]; cuchillo [kučíyu].

5. /a/ → [a←] /____ /ñ y č/; /____ /n/ $ C; /____ [-syllabic] N, e.g., asco [ásko←].

/a/ → [a→] /____ [ɲ]; and in post-tonic position, e.g., pasa [pása].

/a/ → [a] generally elsewhere.

In Chapter Six of Lamb (1968), the author attempts to correlate the findings from his data with other linguistically related areas in the Caribbean, comparing his data with that found in other published dialect studies of Caribbean Spanish.

The final chapter of Lamb (1968) gives a summary of his findings, and his conclusions based on these data.

Lamb (1968) has been discussed at some length because of the abundance of data it includes. Although some of Lamb's findings do not concur with my observations, or the observations of others on Cuban Spanish, his work does provide a valuable source of data, particularly since he used thirty informants. One potential problem with Lamb's findings is that, of his thirty informants, their average length of residence in this country was three and one-third years. Although it is fairly certain that Lamb's informants who resided in the United States for six months or less (four) should have been representative speakers of the Spanish spoken on the island of Cuba, it is an empirical question whether the other 26 informants (whose average residence in this country is 3.9 years) really are representative of the Spanish spoken in Cuba, i.e., that their Spanish has not been influenced by other variables in their environment. It would be interesting to correlate the data of the informants who have lived in the United States for five years or more years (14) with that of the informants who have resided here one year or less (10).

2.2.2.5 Sosa (1974)

This recent study explores many different areas of the diachronic and synchronic aspects of the phonology of Cuban Spanish. One chapter of Sosa's dissertation deals partially with the present-day

pronunciation of Cuban Spanish. A large portion of Sosa's Chapter 4 is devoted to developing a phonological model of Cuban Spanish. Throughout this chapter, Sosa makes various observations about the pronunciation of Cuban Spanish, which are relevant to the present study. It is perhaps worth noting that this study is quite difficult to read for anyone untrained in current stratificational theory, as it is written within that framework. The following are my interpretations of some of Sosa's observations about Cuban Spanish pronunciation:

1. The Spanish of the province of Oriente is distinguished from that of the other provinces by its intonation.

2. /h/ is heard in Cuban Spanish in place of /x/ of the standard language.

3. The first syllable of carnaval may appear in any of the following ways in Cuban Spanish [kar]; [kaɾ]?; [kal]; [kã]; [kãŋ]; [kaŋ]; [kãn]; [kan]; [kah]; [kãh]; [kas].

4. Vowels in Cuban Spanish do not necessarily appear phonetically as more open, as reported by many other writers, but they may, on the contrary, show the opposite tendency, i.e., toward being more closed. The phonetic shape a vowel takes "depends on its position and on the conditions that accompany its production," i.e., [±stress], the neighboring segments, etc. Sosa adds that "not only does there exist in Cuba the i that tends to be like e . . . but also e that tends to be like i and o that tends toward u" (p. 127).

5. Sosa suggests that the relative open/closed quality of a vowel in Cuban Spanish is determined by what amounts to a type of transderivational constraint; i.e., a given vowel, e.g., /e/ may appear as standard [e], may become more raised, appearing as [i], or lowered,

appearing as [ɛ]; we therefore have a range for /e/, from [ɛ] to [i], with the ideal surface output being [e]. Sosa states that the choice of one of these "different phonetic solutions depends on the degree ('grado') of phonetic liberty given by the redundancies present" (p. 128). Sosa suggests that when there is an absence of semantic or morphological information available rendering the phonetic output ambiguous, the more ideal vowel tends to appear; on the other hand, when there is redundant information supplied, there is a tendency for the more ideal surface variants to appear (p. 128). This is, of course, an interesting hypothesis, but unfortunately, Sosa offers no acoustic or perceptual evidence to support this theory.[12]

6. Unstressed vowels may, particularly in word-final syllables, disappear completely, and also this entire word-final syllable may disappear. If this syllable final vowel is deleted, "there generally occurs a lengthening of the vowel in the preceding syllable. Frequently the 'omitted' vowel is, in reality, expressed as a voiceless vowel; casa can be produced as [ká:sḁ]" (p. 130).

7. Two non-identical contiguous vowels may be reduced to one vowel, or to one syllabic nucleus.

8. Two contiguous identical vowels undergo vowel reduction, "whose length will tend to be greater than that of the simple vowel, but subject to variation according to specific cases" (p. 136).

9. In common words, the tendency to shift stress and then undergo diphthongization, present in most Spanish dialects, does not occur in Cuban Spanish, e.g.:

| | Most Spanish dialects | Cuban Spanish |
|---|---|---|
| país | /país/ | /país/ |
| | páis | stress shift |
| | páys | diptthongization |
| | [páys] | [país] |
| baúl | /baúl/ | /baúl/ |
| | bául | stress shift |
| | báwl | diptthongization |
| | [báwl] | [baúl] |
| ahí | /aí/ | /aí/ |
| | ái | stress shift |
| | áy | diptthongization |
| | [áy] | [aí] |

Sosa specifically excludes learnèd words, e.g., _período_, _austríaco_, _cardíaco_, from the above process, because "These words are diphthongized, i.e., stress shift to the penultimate syllable, in Cuba as in the rest of the Spanish world, with the learned form--without the diphthong--existing in very reduced circles" (p. 141).

10. Verbs ending in _-ear_ /ear/ appear as [jar] on the surface, which has been reported in many different studies on Cuban Spanish, but Sosa specifically excludes the verbs _mear_ and _apear_ from this process (p. 143).

11. Neutralization of liquids, especially in syllable-final position, is very common in Cuban Spanish, e.g., _quedar_ [ke̸dár] ~ [ke̸dál] ~ [ke̸dáɨ]; _poner_ [ponér] ~ [ponél] ~ [ponéɨ]; _cerca_ [sérka] ~ [sélka]; syllable-final liquids may also be deleted.

12. Syllable-final liquids may become nasalized, especially when there is a nasal segment present in an adjacent syllable, e.g., salcochar [saŋkočár]; carnaval [kaŋnabár].

13. In the speech of Whites from the lowest class, and in the traditional speech of Cuban Blacks, liquids are most frequently deleted in preconsonantal and final positions.

14. In the speech of peasants and Cuban Blacks, /l/ may also appear as [y] in preconsonantal and final positions, e.g., porque [póyke]; ser [séy].

15. A tendency exists to insert a vowel between an obstruent and a liquid when these form a consonant cluster, e.g., prado [pᵃrádu]; yagruma [yagᵘrúma]. This inserted vowel can also be pronounced with full vocalic quality, creating semantic confusion between lexical items, e.g., parado--prado, both being pronounced as [paráðo].

16. Sosa suggests that /r/ ⟶ [kr] / #____, as reported in Isbaşescu (1968a), may be more correctly described as [kř], with the word-initial /r/, "being converted into an affricate with initial pronounced occlusion which gives the impression of the corresponding stop", e.g., rato [křáto] (p. 151).

17. In everyday speech, /n/ followed by the semivowel [y] becomes palatal [ñ], and the [y] is deleted, e.g., demonio [dImóñU]; Tonia [Tóña]; boniato [bUñátU].

18. Nasal segments tend to be substituted for all other consonants in post-vocalic position, especially if there is another nasal consonant present in an following syllable, e.g., alguno [angúnU]; desde [dénde]; bye bye [bambáy]; a nasal segment may be added at the end of open syllables, e.g., negro [néngrU]; irritado [iñritáU]; or a

vowel in an open syllable may simply become nasalized, e.g., satisfacción [satĩfasyõn].

19. In word-initial position, a vowel may be deleted, and "can result in a syllabic nasal", e.g., entonces [n̩tõnsI] (p. 153).

20. Nasals are assimilated to the following obstruent, as in standard Spanish, e.g., canto [kántU]; concho [kõ̃ncU]; angulo [aŋgúlU]; convidar [kombi̯ár]; but a nasal before /r̃/ appears as [ŋ], and not as alveolar [n], e.g., honra [oŋr̃a].[13]

21. Unlike standard Spanish, however, a nasal followed by a fricative consonant, or a nasal consonant in word-final position followed by a vowel-initial word within the same breath-group, or a nasal at the end of a breath group, appears phonetically as [ŋ], i.e.:

$$/n/ \rightarrow [ŋ] \;/___\; \left[\begin{matrix}[+\text{cont}] \\ \#V \\ " \end{matrix}\right]$$

e.g., cansada [kaŋsá]; son hadas [sóŋá̯da]; en agua [eŋáwa].

22. /n/ ⟶ [ŋ] before the grapheme h, when prefix-final /n/ is followed by a vowel, "perhaps because of orthographic influence, or as a morphemic consequence," e.g., anhelo [aŋélo]; inhumano [iŋumánU]; but inamovible [inamowí̯ble] (p. 155).

23. $V\ N \rightarrow \tilde{V}\ (N) \;/___\; \left\{\begin{matrix}\# \\ [-\text{syllabic}]\end{matrix}\right\}$, e.g., donde [õde]; son altos [sõ̃áltoh] ~ [sonáltoh].

24. The phonetic manifestation of /b d g/ as [±continuant] occurs in Cuban Spanish as prescribed by the "standard language," i.e., they become [+cont] after pauses, after nasals, and after /l/ in the case of [d], only in careful speech, e.g., dedo [dé̯do]; falda [fálda]; bobo [bó̯bo]; gago [gá̯go]. In normal speech in Cuban Spanish, the [+continuant] and [-continuant] surface manifestations of /b d g/ are in

free-variation, except that the [-continuant] forms "tend to predominate in non-intervocalic environments" (p. 157).

25. /b d g/ may become semi-vowels in intervocalic position or before liquids, e.g., tabla [táwla]; cobra [kówra]; pobre [pówre]; Habana [awána]; coda [kówa]; Cuba [kúwa] (p. 160).

26. In emphatic speech, the nasal [ŋ] tends to be substituted for other nasals, rather than the nasal being homorganic to the following obstruent, e.g., conde [kŏŋde].

27. [ɸ] and [β] may be deleted in rapid speech in intervocalic position, e.g., nada [náa]; a buscar [awhkár]. [β ɸ ɣ] in syllable-final position "is assimilated to the consonant that follows it, is deleted, or even--in emphatic speech--becomes the corresponding [voiceless] stop," e.g., subdirector [suɸirektór]; obtuso [o$^{t}$túso]; verdad [be$^{d}$dá]; usted [uhté] vs. [supdirektór]; [optúso]; [berdát]; [uhtét] (p. 161).

28. [ɣ] may be deleted when it follows [h], e.g., las gomas [lahóma]; las gallinas [lahayína].

29. /e/ → [ø] / /č/____ [-ar], e.g., chochear [cočár]; catchear [kešár].

30. [$^{\check{}}$s] and [$^{\check{}}$č] are free-variants of systematic /č/, e.g., macho [mášU]; chico [ší$^{\check{}}$ko].

31. [k] may become [ɣ] in intervocalic environments, e.g., la cosa [laɣósa]; vaqueta [βaɣéta]; las camas [laɣáma].

32. /f/ is realized as [ɸ], i.e., a voiceless bilabial fricative, before [r], [l], or a vowel, e.g., cofre [kóɸri]; flor [ɸlól]; fino [ɸínU].

33. /s/ appears as [h] or [ø] /____#V in normal speech, and not as [s]. /s/ only appears as [s] in absolute final position or in pre-consonantal position in affected speech or in cases where semantic ambiguity may exist.

34. /s/ /i/ [V] ⇒ [š] [ø] [V]
1 2 3 1 2 3

e.g., asociación [asošašón]; comisión [komišón].

35. "Orthographic f may be aspirated in Cuba in some words--the same thing that occurs with h and s," e.g., fumar [humár]; fuerte [hwértI]; huyuyo [huyúyu]; hablar [ya)lár]; halar [halár] (p. 168).

36. /s/ may appear as [h] in syllable-initial position, e.g., décimo [déhimo]; pese [péhe] (p. 169). If, however, a word-boundary intervenes, the above process does not take place.[14]

37. /s/ may also be assimilated to a following consonant, e.g., hasta [á$^{t}$ta]; busca [bú$^{k}$ka]. Again no data are offered to support this type of assumption. Without actual physical measurements, it is doubtful that this type of assumption can be taken too seriously. Is /s/ actually assimilating to the following obstruent, or is /s/ merely being deleted?

38. When preconsonantal /s/ is preceded by a word-initial vowel, this word-initial vowel may also be deleted, e.g., hasta [ta]; está [htá].

Besides the observations of Sosa mentioned above, there are many other statements given by the author in his Chapter Four regarding the pronunciation of Spanish on the island of Cuba. The thirty-eight items discussed above are by no means exhaustive of Sosa's study, but merely those topics felt to be most important or relevant to the present study, or those topics not mentioned in most other studies previously done on the phonetics or phonology of Cuban Spanish.

2.2.2.6 Vallejo-Claros (1970)

This study is primarily socio-linguistic in nature, and it discusses the distribution of four surface realizations of /r/, two of /r̃/, and four of /s/ in terms of their stratification in different geographic areas and socio-economic levels in Cuba. As it was not the author's purpose to present data concerning the pronunciation of Cuban Spanish, except for the surface manifestations of these three systematic phonemes, the information in Vallejo-Claros (1970) relevant to the present study is very limited.

Vallejo-Claros' data was gathered during the years 1968, 1969, and a short period of time during 1970. His body of data consisted of 400 hours of recordings from 750 informants, whose ages varied from twenty to sixty-five years, with an equal proportion of male and female informants. The informants used in his study were all recent arrivals on the "Freedom Flights" from Cuba, and the interviews took place in the Miami, Florida area. (see 2.2.1.6 and 2.2.1.12 above).

Vallejo-Claros considered the following phonetic manifestations of systematic /r/:

1. [r], a voiced alveolar flap (R-1)
2. [ṙ], a voiced alveolar fricative liquid (R-2)
3. [l], a voiced lateral (R-3)
4. [ø] (R-4)

These surface representations were studied in the following environments: /____#, e.g., /amar/; /V____V, e.g., /arado/; /C____V, e.g., /prado/; /V____C, e.g., /korte/.

The stratification of these four phonetic variables, as well as the phonetic variables studied for /s/ and /r̃/, were analyzed in terms of these three socio-cultural levels:

1. upper class (superior S-1)
2. middle class (media S-2)
3. lower class (inferior S-3)

and in terms of the following three geographic areas:

1. Western Cuba (G-1): the provinces of Pinar del Río, La Habana, and Matanzas;
2. Central Cuba (G-2): the provinces of Las Villas and Camaguey;
3. Eastern Cuba (G-3): the province of Oriente.

For purposes of the present study, the following data on the phonetic manifestations of systematic /r/ are presented:

1. [r] occurred an average of 80% of the time in Vallejo-Claros' data; [ṙ] 17%; [l] 2%; [ø] 1%. In terms of socio-cultural classes, the following distribution is given (all percentages are averages):

| | | |
|---|---|---|
| a. upper class | [r] | 88% |
| | [ṙ] | 10% |
| | [l] | 1% |
| | [ø] | 1% |
| b. middle class | [r] | 79% |
| | [ṙ] | 18% |
| | [l] | 2% |
| | [ø] | 0% |
| c. lower class | [r] | 73% |
| | [ṙ] | 23% |
| | [l] | 3% |
| | [ø] | 1% |

With respect to geographic distribution, the following averages for the surface realizations of /r/ are noted:

| | | |
|---|---|---|
| a. Western Cuba | [r] | 66% |
| | [r̆] | 27% |
| | [l] | 4% |
| | [ø] | 3% |
| b. Central Cuba | [r] | 81% |
| | [r̆] | 18% |
| | [l] | 1% |
| | [ø] | 0% |
| c. Eastern Cuba | [r] | 93% |
| | [r̆] | 7% |
| | [l] | 0% |
| | [ø] | 0% |

Vallejo-Claros included the following surface realizations of systematic /r̃/ in his study:

[r̃]--a voiced alveolar trill (R-1)

[r̆̃]--a lengthened alveolar liquid fricative (R-2)

These phonetic manifestations were studied in the following environments: /#____, e.g., /r̃osa/; /V____V, e.g., /ar̃os/; /C____V, e.g., /onr̃a/.

The following information, relevant to the present study, is taken from Vallejo-Claros (1970):

1. [r̃] occurred an average of 94% of the time; [r̆̃] 6%. With regard to socio-cultural classes, the following distribution of [r̃] and [r̆̃] is given (all percentages are averages):

| | | |
|---|---|---|
| a. upper class | [r̃] | 97% |
| | [r̆̃] | 3% |

b. middle class [r̃] 94%
[ṙ] 6%

c. lower class [r̃] 92%
[ṙ] 8%

With respect to geographic stratification of systematic /r/, the following is noted:

a. Western Cuba [r̃] 90%
[ṙ] 10%

b. Central Cuba [r̃] 95%
[ṙ] 5%

c. Eastern Cuba [r̃] 98%
[ṙ] 2%

In Vallejo-Claros (1970), the following surface realizations of systematic /s/ were considered:

[s]--a voiceless predorsal convex alveolar fricative (S-1)

[s̻]--a voiceless apico-alveolar fricative (S-2)

[h]--a voiceless pharyngeal fricative (S-3)

[ø] (S-4)

The above phonetic manifestations of systematic /s/ were studied in the following environments: /#____, e.g., /sinko/; /____#, e.g., /ihos/; /V____V, e.g., /pasar/; /C____V, e.g., /bolsiyo/; /V____C, e.g., /poste/; /C____C, e.g., /instruir/.

The following information, relevant to the present study, taken from Vallejo-Claros' study is presented:

1. [s] occurred an average of 52% of the time; [s̻] 6%; [h] 35%; [ø] 7%. With regard to socio-cultural classes, the following distribution is given for the surface realizations of /s/ (all percentages are averages):

| | | |
|---|---|---|
| a. upper class | [s] | 56% |
| | [ṣ] | 5% |
| | [h] | 35% |
| | [ø] | 4% |
| b. middle class | [s] | 52% |
| | [ṣ] | 6% |
| | [h] | 35% |
| | [ø] | 7% |
| c. lower class | [s] | 49% |
| | [ṣ] | 6% |
| | [h] | 36% |
| | [ø] | 9% |

With respect to the geographic stratification of the surface level manifestations of systematic /s/, the following is noted (again all percentages are averages):

| | | |
|---|---|---|
| a. Western Cuba | [s] | 50% |
| | [ṣ] | 4% |
| | [h] | 39% |
| | [ø] | 7% |
| b. Central Cuba | [s] | 49% |
| | [ṣ] | 8% |
| | [h] | 32% |
| | [ø] | 11% |
| c. Eastern Cuba | [s] | 58% |
| | [ṣ] | 4% |
| | [h] | 36% |
| | [ø] | 2% |

It seems obvious from the above data that the much more frequent aspiration of /s/ in Western Cuba, mentioned by other authors, is not supported by Vallejo-Claros' findings, unless one wishes to make the claim that there is some significant difference in 39%, 32%, and 36%, or at least enough of a difference to claim that aspiration of /s/ is much more frequent in Western Cuba.

Besides the data given above, there is a great abundance of further socio-linguistic data presented in Vallejo-Claros (1970) which have been omitted here, as they are beyond the scope of the present study.

2.2.3 Papers Presented on Cuban Spanish

In this section, one paper, the only one to my knowledge given on Cuban Spanish which deals with phonological or phonetic data, is discussed. It is, of course, highly possible that other papers exist, which have been overlooked, since there is no regular published listing of papers presented at all linguistic conferences.

2.2.3.1 Guitart (1974)

This paper is largely theoretical in nature, and therefore presents a minimum of phonetic detail. Guitart does, however, provide the following information relative to pronunciation in three dialects of Havana, Cuba:

1. "In one Havana dialect spoken by uneducated Whites" systematic /s/ and /f/ both are phonetically realized as [h] /____C in rapid speech; e.g., esto [ɛ́hto]; difteria [dihtérya]"(p. 2). Although I have not observed /f/ → [h] /____C with any degree of regularity, I have, nevertheless, observed /s/ → [h] /____C as a frequent occurrence in my informants from Havana, all of whom are educated Whites. It would

appear then, that /s/ → [h] /____C, in MCS at least, is not a phenomenon limited to uneducated Whites. This matter will be discussed more fully in section 3.3 of this study.

2. In the same Havana dialect discussed above, /r/ → [h] /____ [+sonorant], e.g., carne [káhne]; Carlos [káhlo]. Again, Guitart attributes this phenomenon to uneducated Whites from Havana. Among my informants from Havana, with university education, the pronunciation of the word Carlos regularly appears in the following ways: [kárlo] ~ [káhlo] ~ [káØlo]. Thus, it appears from my informants from Havana, that this phenomenon is not limited to uneducated Whites in MCS.

3. In "Black Cuban" speech, /s/ may appear as [Ø] /____C, e.g., esto [éto]. Again, I must object not to Guitart's observation of this process, but rather to his relegation of /s/ → [Ø] /____C to the speech of Black Cubans. Among my informants, /s/ → [Ø] /____C appeared with regularity, at least in rapid speech. This phenomenon appears in the speech of my informants, all educated Whites, who come from all six of the Cuban provinces.

4. In the speech of uneducated Whites from Havana "gemination occurs in the realization of non-strident obstruents in syllable-final position in rapid speech," e.g., doctor [dot˺tór]; acto and apto [át˺to]; abdomen [ad˺dómen] (p. 5). The geminated non-strident obstruent is realized as unreleased, and the following segment, if /b d g/, is realized as a stop, rather than as a continuant.

5. In the Educated Spanish of Havana (ESH), in rapid speech, systematic /r/ and /l/ are neutralized in syllable-final position. Their surface manifestation depends on the feature [coronal] of the following segment: (a) Liquids appearing before $\left[\begin{smallmatrix}+\text{voiced}\\-\text{coronal}\end{smallmatrix}\right]$ segments

become geminated, with the geminated liquid being realized as unreleased. Guitart states that "in addition, if the second consonant is /b d g y̌/ the stop allophone occurs" (p. 5). This statement is difficult to follow, since /d/ and /y/ are both [+coronal]. Guitart gives the following examples:

| | |
|---|---|
| alma and arma | [ámma] |
| el bobo | [eb̚bóβo] |
| ser bobo | [séb̚bóβo] |
| el gato | [eg̚gáto] |
| él llamó | [eyy̌amó] |

(b) Liquids appearing before $\left[\begin{smallmatrix}-\text{coronal}\\-\text{voiced}\end{smallmatrix}\right]$ segments are assimilated, but the feature [+voiced] of the systematic liquid is retained, e.g., el padre [eb̚páðre]; el caso [eg̚káso]. (c) Systematic liquids occurring before [+coronal] segments, except /s/, are realized as an unreleased $\left[\begin{smallmatrix}+\text{coronal}\\-\text{anterior}\end{smallmatrix}\right]$ segment; the [+coronal] segment following the liquid is realized also as [-anterior], e.g., el domingo [ed̚d̈omíŋgo]; primer domingo [priméd̚d̈omíŋgo] ([d̈] is used by Guitart to represent non-anterior /d/). (d) Systematic liquids occurring before /s/ are realized as a flap (represented as [r̈]) before other [+coronal] segments, e.g., el socio [er̈sósyo]; ser socio [sér̈sósyo], with the /s/ being realized as [-anterior]. Guitart notes that the realization of /s/ as [-anterior] "alters its timbre. . . with [s] sounding more similar to English [š] than to English [s]" (p. 6).

2.2.4 Unpublished Studies on Cuban Spanish

In this section, two studies done by Tracy Terrell are discussed. Although these two studies are, at this time, unpublished, they are, nevertheless, of interest because they not only raise some important

questions relative to phonological theory, but they also provide a corpus of data upon which Terrell bases some of his later published studies, e.g., Terrell (1975a, b, d), and (1976a).

2.2.4.1 Terrell (1974a)

In this study Terrell presents data concerning the retention, aspiration and deletion of systematic /s/ in the Spanish of Havana. His data are taken from tape recordings made during the "Estudio coordinado de la norma lingüística culta de las principales ciudades de Iberoamérica y de la Península Ibérica"; this same group of taped interviews serves as a data source for other studies by Terrell, for Haden and Matluck (1973 and 1974), and for Vallejo-Claros (1970). The author's purpose in this study is not, however, that of providing a large body of data, but rather to propose a linguistic explanation, based primarily on weakening processes, of s deletion and s aspiration as it occurs in different environments in this dialect.

Terrell (1974a) presents data relative to s retention, s aspiration and s deletion in syllable-final position within a word, and word-final position within a breath-group based on the following dichotomy:

1. s retention--the [s] and [z] surface manifestations of /s/;

2. s aspiration and s deletion--the [h], [ĥ] or [ø] surface forms of /s/, i.e., deletion and aspiration of /s/ is considered as one group, and is contrasted as a whole with s retention.

Terrell (1974a) presents the following data, of interest to the present study:

1. In syllable-final position within a word, /s/ is retained 3% of the time and aspirated or deleted 97% of the time.

2. In word-final position, /s/ is retained, i.e., [s] or [z] 33% of the time and either aspirated or deleted 67% of the time.

3. In word-final position, /s/ is retained 5% of the time before consonants, and is aspirated or deleted 95% of the time in this environment.

4. /s/ is retained 30% of the time before vowels and is aspirated or deleted 70% of the time when a vowel is the next immediate segment.

5. /s/ is retained 62% of the time before a pause and is aspirated or deleted 38% of the time in this environment.

As interesting as the above data from Terrell (1974a) may be, it is not possible to compare his percentages with those given for the surface forms of systematic /s/ in Chapter Three of the present study because Terrell analyzes these data based on syllable-final position within a word and word-final position, while the present study discusses the different surface manifestations of /s/ based on syllable-final position within a word, word-final position within a breath-group and absolute-final position. Also, Terrell presents his percentages based on two groupings--[s] and [z] versus [h], [ĥ] and [ø], while the present study presents its percentages based on the categories--s retention, [s] versus s aspiration, [h] and [ĥ]; versus s deletion, [ø].

2.2.4.2 Terrell (1974b)

Although the author's purpose in this study is to propose an explanation for why s aspiration and s deletion occur in different environments, based on phonological and grammatical constraints, there is, nevertheless, some data presented which is relevant to the present study. This study uses the same data source as Terrell (1974a).

In the data and in Terrell (1974b), of 7149 occurrences of /s/, 17% appeared phonetically as [s], 63% as [h] ~ [ɦ], and 20% as [ø].

The data given in Tables XXI, XXII, and XXIV in Chapter Three of the present study show that of 3415 occurrences of /s/, the surface form [s] occurred at a percentage rate of 4.7%, [h] occurred at a rate of 46.2%, and [ø] at a rate of 49.1%.

Comparing Terrell's data with the data on systematic /s/ in Chapter Three of the present study, it can be seen that in both studies [s] is the least frequent occurring surface manifestation of /s/, although Terrell reports an occurrence rate of 17% while in this study only 4.7% is reported. The difference in these two percentages could be due to several different variables; the most likely of these variables is probably the interview situation. Terrell's data is based on a more formal interview environment, while the data used in this study were obtained from a totally non-structured, social environment. It would seem likely that the more formal the interview situation, the higher the percentage of s retention.

Terrell (1974b) reports a 63% rate of s aspiration versus a 46.2% given in the present study; Terrell (1974b) reports a 20% rate of s deletion versus 49.1% reported in the present study. The differences between the percentages of s aspiration and s deletion in these two studies may be due, in each case, to the authors' exact interpretation of s deletion. Terrell considers, for example, a lengthened vowel replacing a vowel followed by /s/ as a case of aspiration and not deletion (personal communication), whereas this is considered to be deletion in the present study. This difference alone would greatly affect the reported percentages.

In syllable-final environments, Terrell (1974b) reports [s] occurring only 2% of the time, [h]~[ĥ], 97%, and [ø], 1%.

In the present study, in syllable-final environments (Table XXIV), [s] appears at a rate of 9.4%, [h] at a rate of 70.3%, and [ø], 20.3%. Although the specific percentages differ, both studies show that in syllable-final environments, [h] is by far the most frequently occurring surface manifestation of /s/.

Terrell (1974b) reports the following percentages for the different surface forms of /s/ in word-final environments within a breath-group:

| | Preconsonantal | Prevocalic |
|---|---|---|
| [s] | 2% | 16% |
| [h] | 75% | 50% |
| [ø] | 23% | 34% |

Terrell (1974b) presents a great deal of data on s retention, aspiration and deletion in relation to different grammatical categories, in an effort to support the hypothesis of the study. Some of his conclusions are (1974b, pp. 29-30):

1. Deletion is a process of word-final environments; aspiration occurs both in syllable-final and word-final environments.

2. There are three relevant phonological environments for s deletion and s aspiration: preconsonantal, prevocalic, and prepausal.

3. The rule of s aspiration occurs most frequently in preconsontal environments and least frequently in prepausal environments, while the percentages of application of the different environments of the rule of s deletion are inversely related, i.e., s deletion occurs most frequently in prepausal position and least frequently in preconsonantal environments.

4. s aspiration is largely unaffected by grammatical constraints, with the exception of determiners in pre-vocalic position.

5. "s deletion, on the other hand, is primarily correlated with morphological classes and grammatical functions and is constrained by functional considerations" (1974b, pp. 29-30).

6. Deletion is suppressed in prenominal modifiers and in the verb form es.

7. In Cuban Spanish, there is no structural necessity for an expanded seven-vowel system, as proposed in many previous studies on different Spanish dialects (see Hammond, 1973, pp. 1-5).

## 2.3 Miami-Cuban Spanish

Because the MCS dialect area is quite new in comparison to other American-Spanish dialect areas, it is understandable that there has not been an overabundance of research done on it yet. Almost all of the research done on MCS that has found its way into print, or has been presented in the form of papers read at linguistic conferences, has been carried out within the state of Florida, and more specifically, at either of two universities within the State University System of Florida. Because almost all of this research has been done in the form of master's theses, doctoral dissertations, or papers read at conferences, it is not surprising that it has not received very wide distribution. Because this material has not been readily available to others thus far, the content of each of these seven studies on MCS known to me will be briefly discussed in the remainder of this section.

### 2.3.1 Published Materials on MCS

As far as can be determined, Resnick and Hammond (1975) is the only published article that deals specifically with MCS. This article

summarizes the experiment and findings done in Hammond (1973). This experiment deals with the surface manifestations [s] and [ø] of systematic /s/ in MCS. Since this article and Hammond (1973) deal with the same data, Resnick and Hammond (1975) will not be discussed more fully here, but rather in section 2.3.2 below, in the discussion of Hammond (1973).

### 2.3.2 Masters and Doctoral Research Done on MCS

After extensive bibliographical research, it appears that there are only two masters theses and, including this study, only two doctoral dissertations which specifically deal with MCS. The two masters theses are Hammond (1973), and Fernández (1973).

Hammond (1973) is an experimental study which attempted to verify the hypothesis often-repeated in the literature on Spanish phonology[15] that a compensatory change in the vowel formant structure takes place (in those dialects of Spanish where /s/ → [ø]) when this vowel precedes the surface manifestation [ø] of systematic /s/. Although no consistent significant change was observed in the formant structure of vowels appearing before /s/ → [ø] /____$ in MCS, there was, however, a consistent observable (both acoustically and perceptually) compensatory vowel lengthening which took place in the vowel immediately preceding deletions of systematic /s/ in syllable-final environments within a word. Thus, although the morphemic and/or semantic distinctions carried by systematic /s/ were neutralized in this environment, the additional vowel length served to compensate for this neutralization. Therefore, after the application of the late rapid speech rule of syllable-final s deletion, a minimal pair, e.g., busque 'look for' [búske]--buque 'ship' [búke] should become neutralized, both lexical

items appearing as [búke]. However, because of the process of compensatory vowel lengthening, they are still distinguished, after the application of Rule I, by differences of vowel length, i.e., as busque [bú:ke]--buque [búke]. This type of data found in Hammond (1973) will be discussed more fully in section 3.5 of this study, and the interesting theoretical implications that arise from this process in MCS will be discussed fully in section 4.3 of the present study.

Fernández (1973) is a study of lexical and syntactic borrowings from English which are used in MCS. Most of Fernández's study concerns lexical borrowings, such as mopear, from the English verb 'to mop,' frequently used in MCS instead of standard Cuban Spanish trapear (pp. 41-42) or flonquear (un curso), from the English 'to flunk (a course),' instead of the standard Spanish suspender (un curso) (p. 39). Fernández gives the phonetic representations for each of these borrowings. He also discusses some syntactic borrowings from English that are found in MCS. One example Fernández gives is the placement of adverbials between auxiliary verbs and participles (pp. 66-67), e.g., Juan ha rápidamente salido 'John has quickly left,' based on this type of syntactic pattern found in English. The type of syntactic surface structure of:

AUX + ADV + PARTICIPLE

allowable in surface structure in English and MCS is impossible in standard Spanish, in which *Juan ha rápidamente salido is ungrammatical, and must be expressed as: (1) Juan ha salido rápidamente; (2) Rápidamente Juan ha salido; or (3) Juan rápidamente ha salido. Fernández (1973) also gives some background sociological information on the MCS dialect area.

Besides this study, the only other doctoral dissertation being done on MCS is Bjarkman (forthcoming) which is primarily a theoretical study, using MCS as a data source which may be used to test some of the claims made by the theory of Natural Phonology proposed by Stampe. Bjarkman (forthcoming) applies the concepts proposed by Stampean Natural Phonology to the investigation of linguistic borrowing. Although Bjarkman's study deals with loan-word phonology in MCS, it makes no claim to have provided a complete description of all phonological processes involved in linguistic borrowing in MCS, or to have accounted for all such borrowings. This study uses loan-word phonology of MCS as a means to an end, not as an end in itself.

2.3.3 Papers Read on MCS

As far as can be determined, after careful research into the matter, there have been three papers read on the MCS dialect, all within the last two years.

Resnick and Hammond (1973) discussed some of the findings and data of Hammond (1973), and dealt primarily with some of the acoustic and perceptual impact of s deletion in the MCS dialect. This paper compared the formant structure of vowels before and after the deletion of a following /s/. The phenomenon of compensatory vowel lengthening before deleted /s/ within a word, but not word-finally, in MCS was discussed.

Saciuk (1974) discussed the voicing of intervocalic voiceless stops in the rapid speech of some speakers of MCS who originally came from the Cuban province of La Habana. This study showed that this voicing process applying to all three /p t k/ takes place only in very rapid speech, and apparently never occurs if the rate of speech is decreased.[16] This study also compared this synchronic phenomenon of

intervocalic voicing of voiceless stops in MCS with the well-known historical process that took place in Old Spanish, in which intervocalic voiceless stops became voiced.

Hammond and Resnick (1974) discussed the history and development of the hypothesis that there is a change in the formant structure of vowels occurring before surface manifestations of deleted /s/, i.e., that these vowels become more open in this environment, as a compensatory mechanism for the loss of the morphological and semantic information carried by /s/. It was shown that no such vowel formant restructuring takes place in MCS, and that in word-final position when /s/ → [ø] in MCS, the singular-plural distinctions carried by /s/ in nouns and adjectives, and the second vs. third-person distinctions carried by /s/ in Spanish verbs are lost, and that these distinctions can only be adduced from linguistic context.

2.4 Other Spanish Dialect Areas

In this section, several topics, found in other Spanish dialect areas, relevant to phonetic or phonological processes of Cuban Spanish will be discussed. The dialect areas described in the articles discussed in this section are, for the most part, dialects that share many phonological similarities with Cuban Spanish, e.g., Puerto Rican Spanish, Porteño Spanish, Andalusian Spanish, etc.

One of the articles discussed in this section, del Rosario (1956), is at times dealing with Cuban Spanish, but under the heading of Caribbean Spanish. For this reason, this article will be given a more detailed discussion than the other studies mentioned in this section.

Only some of the relevant portions of the remaining seven studies discussed in this section will be presented very briefly here, as a general discussion of their contents is beyond the scope of this study.

2.4.1 Cassano (1972)

Cassano attributes the phonetic process of the occurrence of [š] as a surface variant of systematic /č/ of Porteño Spanish to French influence. This process is also widely found in Cuban Spanish and in MCS, for which a claim of French influence would be difficult to support.

Cassano also discusses the appearance of [ñ] in word-final position in the Spanish of Argentina, also as a result of French influence, e.g., [campáñ] as a surface realization of champaña, based on French champagne [šapáñ]. The appearance of the nasal [ñ] in word-final position, along with other possible phonetic solutions, will be discussed in sections 4.6 and 4.7 of the present study.

A characteristic of Argentinian Spanish discussed by Cassano, which is not related to French influence, is the development of an eight-vowel phonemic system. Cassano states that "the loss of the plural marker {s} in other dialects of Argentine Spanish (and in the dialects of other Spanish American countries as well) has resulted in new functional oppositions based on vowel quality," e.g., va [bá], vas [bą́] (back /a/); dio [dyǫ́], Dios [dyǫ́] (p. 176). Cassano, however, offers no empirical evidence to support this contention, a claim often made about those dialects of Spanish in which syllable-final /s/ may optionally appear as [ø].

2.4.2 del Rosario (1956)

In his chapter entitled "The Antilles" de Rosario devotes five pages to a discussion of the pronunciation of the Spanish in Cuba, Puerto Rico, and the Dominican Republic. Some of the author's observations about the Spanish of Cuba, or about these three countries in general are:

1. A vowel system containing seven phonemes /a ẹ ę i ọ ǫ u/. The seven-vowel system "resulting from the change s > h; the aspirate [h] opens the preceding vowel, and on eliminating it [the [h]] the open [ẹ] and [ọ], slightly lengthened, remain, which can occur also with the a" (p. 83). Del Rosario offers the following examples of this phenomenon: peso [pésọ]--pesos [pésǫ]; pie [pyę́]--pies [pyę́]; come [kómẹ]--comes [kómę]; dio [dyọ́]--Dios [dyǫ́]. In this discussion, however, del Rosario is referring to the Spanish of the Antilles in general, so it is difficult to determine whether the author is making the same specific claim about Cuban Spanish. At any rate, he offers no acoustic or perceptual data to support his claim of a seven-vowel phonemic system (or later an eight-vowel system).

2. The frontal or predorsal /s/ occurs more frequently than the apical.

3. /h/ occurs in place of the /x/ of the standard language, e.g., paja [páha].

4. /s/ → [h] in syllable-final position, e.g., pescar [pehkár].

5. /n/ → [ŋ] /____#, e.g., pan [páŋ]; jamón [hamóŋ].

6. "Total assimilation [of /r/] to a following consonant is heard at times in the Antillean region, but is much more frequent in the western part of Cuba" (p. 82). Del Rosario offers the following examples observed in Havana: cuerpo [kwéppo]; puerta [pwétta]; reforma [refómma].

2.4.3 Honsa (1965)

In discussing the taxonomic phonemic inventories of six dialects of Argentinian Spanish, Honsa lists an eight-vowel system for the dialects he refers to as Standard Buenos Aires; Colloquial Buenos Aires;

Lunfardo; West and North Argentinian; provinces of Corrientes and Misiones: /a ą e ę i o ǫ u/. Without offering any supporting evidence, Honsa states that when the allophone [h] of /s/ is deleted at the end of syllables, "an additional phonemic contrast of vowels steps in to differentiate meaning. This contrast is neutralized in all other syllables" (p. 277).

2.4.4 Hooper (1973)

In this study, Hooper, who is arguing for a phonological model based on the tenents of Venneman's Natural Generative Phonology, uses data from Saporta (1965), Mondejar (1970), and Alonso et al. (1950), which have to do with open vs. closed distinctions in vowels. Along with the theory espoused by Cassano (1972), Honsa (1965), and many others, there is claimed to be an opening (laxing) of vowels in syllables checked by /s/ in those dialects where /s/ may appear as [ø] /____$. This vowel opening or laxing serves as a compensatory mechanism to preserve the morphological or semantic information carried by /s/. There is no acoustic or perceptual evidence presented by any of these authors to support the above theory, and Hooper, as have many others, apparently accepted this open-closed vowel distinction as valid. As previously mentioned, in an attempt to prove the validity of such an open-close distinction in vowels before /s/, in one Spanish dialect where /s/ may optionally appear as [ø] /____$, neither acoustic nor perceptual evidence could be found to support such a theory (Hammond, 1973). While the fact that such a morphophonemic change, as suggested by an open-closed vowel inventory, was disproved for one dialect where /s/ may appear as [ø] (MCS), it remains an empirical question whether such a morphophonemic change could or could not occur in other

dialects where /s/ deletion occurs. Until such claims can be supported in some manner by data from these dialects, such claims must be, at best, regarded with a certain amount of skepticism. Fortunately for Hooper, the correctness of these claims will not appreciably weaken any of her arguments.'

2.4.5 Mondejar (1970)

Although this study directly concerns itself only with the Andalusian verbal system, it does, nevertheless, touch on some items of pronunciation relevant to Cuban Spanish. The Spanish of Andalusia and the Spanish of the greater Caribbean area, of course, share many phonological and phonetic processes. The Spanish of Andalusia, like Cuban Spanish, is a dialect where /s/ may be realized also as [h] or [ø] at the phonetic level. Mondejar makes the interesting claim, although he unfortunately presents no supporting evidence (in terms of spectrographic evidence or perceptual studies), that in Western Andalusía, when /s/ appears phonetically as [ø] in verb endings, "the speaker uses other differentiating elements for the lack of phonemicized vocalic openness to show the already mentioned oppositions: the personal pronouns" (p. 40). On the other hand, Mondejar claims for Eastern Andalusía a ten-vowel phonemic system, with each vowel of the five-vowel system of standard Spanish splitting into an open vs. closed phoneme: /a̤ a e̤ e i̤ i o̤ o ṳ u/ (p. 38). Mondejar states that "the loss of -s produced a non-differentiation in the system, a fissure, a weak point. The phonemicized vowel openness reestablishes internal order to avoid such a weak point in the system" (p. 40).

Mondejar lists the following phonetic manifestations of word-final -r in Andalusian Spanish: [r l ø h ɾ r̥], with the first three surface realizations being the most common.[17]

When an infinitive is followed by one of the object pronoun clitics (all whose initial segment is /l/), the final /r/ of the infinitive may undergo the following changes:

a. /r/ /l/ ⟹ [y], e.g., cantarle [kantáye], hacerle [aséye].

b. /r/ → /l/ /____/l/, e.g., darle [dá$^{l}$le], taparla [tapá$^{l}$la].

c. /r/ → [hl] /____/l/, e.g., pisarla [pisá$^{hl}$la]; cantarle [kantá$^{hl}$le].

d. /r/ → [h] /____/l/, e.g., botarlo [botá$^{h}$lo]; cantarle [kantá$^{h}$le].

e. /r/ → [Ø] /____/l/, e.g., cantarle [kantále]; cubrirla [kubríla].

When the final /r/ of an infinitive precedes the clitic se, it is normal for this /r/ to be totally assimilated to the following /s/, e.g., abrigarse [abrigáse]; ahogarse [aogáse]. This /r/, however, may at times undergo no change, e.g., toparse [topárse], or it may appear as [l], e.g., secarse [secá$^{l}$se].

Mondejar also mentions that in Andalusian Spanish, he found but one case of a verb ending in -ear being phonetically realized as [yár]; this process occurs quite commonly in Cuban Spanish and in MCS.

2.4.6 Navarro-Tomás (1957)

Although this work does not deal specifically with Cuban Spanish, there is one item directly related to one of the questions dealt with in the present study--that of the status of open vs. closed vowels. In his treatment of Spanish vowels, Navarro-Tomás discusses the open and closed variant of each of the five vowels of Standard Spanish. It is

very interesting, however, that Navarro-Tomás specifically excludes the open variant of the vowel /e/ when it is followed by /s/, i.e., the allophone [ẹ] of /e/ occurs in this closed syllable environment. Navarro-Tomás states that "E abierta . . . aparece en las posiciones siguientes . . . (d) En sílaba trabada por cualquier consonante que no sea m, n, s, d, x, z, y ante x equivalente a [ks]" (p. 53). The morpheme -es, of course, marks the plural of many nouns and adjectives and the second-person singular of many verbs. If Navarro-Tomás is correct in stating that /e/ → [ẹ] /____ /s/$, then this fact alone would greatly weaken, if not totally destroy, "the often-repeated hypothesis that a compensatory phonemic change has taken place in certain Spanish dialects in which syllable-final and word-final /s/ appear optionally as [ø]" (Hammond, 1973, p. 42).

2.4.7 Navarro-Tomás (1966a)

In this very thorough study of the Spanish spoken in Puerto Rico, Navarro-Tomás mentions several phenomena that also occur in Cuban Spanish.

Navarro-Tomás observes that /s/ in absolute final position in Puerto Rican Spanish, is normally deleted, and the vowel preceding this deleted /s/ is the more-open variant of /e/, "En posición final, ante pausa, la s puertorriqueña desaparece normalmente en el habla popular sin dejar otra huella que la de la abertura de la vocal con que la palabra termina" (p. 73). Here, however, Navarro-Tomás does not exclude the vowel /e/ from the above process.

Navarro-Tomás discusses the neutralization of liquids in Puerto Rican Spanish, a process which also occurs in Cuban Spanish. He discusses liquid neturalization to [r], to [l], and to [ɨ]. Navarro-Tomás

found that the most common neutralization was [r], the second most common [l], and that [ɾ] was the least common.

Navarro-Tomás reports that, in word-final position, the velar nasal [ŋ] was dominant in Puerto Rican Spanish at that time (1928). This surface manifestation of word-final nasals also is dominant in Cuban Spanish, but has, since Navarro-Tomás' study, spread to other positions, as reported in many studies on Cuban Spanish. Navarro-Tomás also observed that syllable-final nasals tended to cause nasalization of preceding vowels, a process also reported to occur in Cuban Spanish.

2.4.8 Navarro-Tomás (1966b)

In this study, in his discussion of Spanish vowels, Navarro-Tomás notes that the five standard vocalic phonemes of Spanish all have open and closed variants, but he attributes these to the domain of surface variants, and he maintains that they do not hold a phonemic status in the phonological system of the language.

2.4.9 Tessen (1974)

In this short discussion of the Spanish of Asunción, Paraguay, Tessen observes several phonetic processes which either also occur in Cuban Spanish, or are relevant to the present study.

Tessen reports that in Asunción, the systematic nasal /n/, in utterance-final position "is always bilabial," e.g., están [estám] (p. 935). This process will be discussed later, in sections 4.5, 4.6, and 4.7 of the present study.

The author states that the voiced labio-dental fricative [v] is present, in all social levels, in the Spanish of Asunción, for Spanish b-v, "in all environments except after a nasal, e.g., enviar [embyár], but Bárbara bebe vino [várvaravévevíno]." This surface manifestation of

systematic /b/ as [v] is reported in many Spanish dialects, and is usually attributed to orthographic interference; Tessen, however, attributes [v] in the Spanish of Asunción to interference from Guaraní.

Tessen reports that, as in standard Spanish, /d/ has two surface variants, [d] and [ð], but unlike standard Spanish, the [+continuant] variant appears also in utterance-initial position, e.g., Dacunte [ðakúnte]. Tessen also notes that /d/, in utterance-final position, is frequently deleted. These two processes, /d/ → [ð]/##____; and /d/ → [ø]/____##, have both been observed in Cuban Spanish.

In addition, the author observes that /b/ may be deleted in intervocalic position, and that /s/ is frequently aspirated in syllable-final position, or may even be deleted in this position "as you move down the social scale" (p. 936), e.g., hablaba [avláa]; este sastre [ehtesáhtre], or [etesátre].

In this article, Tessen also notes that the presence of the glottal stop in the Spanish of Asunción is "frequently used to indicate word boundaries" (p. 936), e.g., ella ha hablado [eya?a?avláðo]; Tessen attributes the presence of [?] in the Spanish of Paraguay, to influence from Guaraní, in which [?] is phonemic. The presence of the glottal stop can also be observed in many speakers of Cuban Spanish and MCS. This phenomenon will be more fully discussed in section 4.7 of the present study.

## NOTES

[1]Harris (1969) later refines this rule, shown in its final form as 6.5(9), p. 184.

[2]MCS is a dialect where velar softening occurs, but not in the manner described by Harris' rule of velar softening, since [x] is not a possible surface manifestation of this dialect. Either Harris' rule of velar softening would have to be revised, converting /g/ → [h], instead of [x], or an additional ordered rule converting /x/ to [h], would have to be added to the phonological component of MCS. Which approach is to be taken depends on one's feeling about such questions as abstractness, rule ordering, rule economy in grammars, etc. See p. 178.

[3]Harris (1969), of course, benefitted from the prior work done in Foley (1965). Harris (1969) improved and refined many of the rules found in Foley (1965), while it also covered areas not found in Foley's work. The present study, in turn, has benefitted from Harris (1969) and other studies on Spanish generative phonology done in the interim.

[4]See Saporta (1965); Sableski (1965); particularly see Harris (1969, pp. 3-5) for an interesting discussion of the absurdity of this type of approach suggested by these two linguists.

[5]The information presented below from Almendros (1958) has been translated and paraphrased from the original Spanish. For the ease of reading for non-Spanish speakers, all direct quotations, which are in Spanish in the source, have been translated into English in all sections of the present study.

[6]"Con un sonido atenuado" (p. 150). It is not at all clear what Almendros means here.

[7]It is difficult to believe that [t] and [d] would not also be included in this set, since he does not discuss [rt] and [rd] separately.

[8]Data relative to this phenomenon are given in section 3.7 of the present study.

[9]Lamb notes the absence among his informants of any Blacks, complete illiterates or members of the very wealthy class. For other pertinent information on Lamb's informants, see Lamb (1968, pp. 37-40).

[10]Saciuk (1974) reports $\begin{Bmatrix} p \\ t \\ k \end{Bmatrix} \rightarrow \begin{Bmatrix} \beta \\ \delta \\ \gamma \end{Bmatrix}$ / V____V, but only in the speech of habaneros. Lamb's 30 informants are all habaneros. See section 2.3.3 of this study for a discussion of Saciuk (1974).

[11]See Kiparsky (1973) for a discussion of his strong and weak alternation conditions.

[12]A similar type of translexical constraint is discussed in section 4.4 of the present study.

[13]The process of nasal assimilation and the occurrence of the velar nasal in MCS are discussed fully in section 3.3 of the present study.

[14]See sections 3.5 and 4.9.4 of the present study for a discussion of syllable-initial s aspiration in MCS and Dominican Spanish.

[15]See Honsa (1965, pp. 275-83); Cassano (1972, p. 176); García (1968, pp. 71-72); Zamora Vicente (1960, pp. 229-31); Alarcos Llorach (1968, p. 149); Navarro-Tomás (1966b, pp. 32-34); Canfield (1962, pp. 93-95), etc.

[16]Professor Saciuk has informed me that the data collected so far on his extensive on-going project on MCS phonology seems to indicate that sometimes you hear this voicing of /p t k/ even when the rate of speech is not very fast.

[17][ɬ] represents a voiced alveolar lateralized liquid; [ɽ] is a retroflex liquid.

# CHAPTER THREE

## SOME PHONOLOGICAL PROCESSES FROM MIAMI-CUBAN SPANISH

### 3.1 Introduction

The major purpose of this chapter is twofold: (1) to discuss some of the more important phonological processes of MCS rapid speech which differentiate this dialect from other Spanish dialects; (2) to determine percentages of occurrence of the different phonetic variants of some of the [-syllabic] systematic phonemes of MCS.

While discussing some of the more important phonological processes of MCS rapid speech, this chapter does not attempt to account for all such processes, i.e., it does not claim to be providing a complete rapid speech phonological description of this dialect.

Furthermore, while it is not the case that any one of the phonological processes discusses herein will differentiate MCS from all other dialects of Spanish, the combination of all the phonological processes discussed in sections 3.3 through 3.12 should serve this end.

Perhaps the most significant contribution of this chapter is the determination of the frequency of occurrence (in terms of percentages) of the surface variants of some of the consonantal phonemes of this dialect. With the exception of Terrell (1974a), which determined the frequency of occurrence of the surface variants [s h ø] of systematic /s/ in syllable-final and word-final positions, no phonological study ever done on Cuban Spanish, to my knowledge, has ever attempted to determine such percentages. Phonetic realizations of phonemes have

been traditionally reported to be in "free-variation," or to occur "frequently," "very frequently," "seldom," etc.

The dearth of information regarding the specific frequencies of occurrence of the surface variants (allophones) of the different phonemes of Spanish is, however, not limited to Cuban Spanish. There is apparently no phonological study ever done on any other dialect of Spanish which provides such information.

It is my belief that this type of information is of great importance to the phonological description of any language, and that phonological rules written with frequencies of occurrence in mind will be far more significant than those written in terms of "frequently," "often," etc., not only in terms of synchronic description, but also in regard to diachronic phonologies, which when compared to the synchronic phonological description of a given dialect, may provide valuable insight about future trends of this dialect.

Before such frequencies of occurrence become significantly meaningful, however, a very large number of such studies must be carried out, thereby providing a large and meaningful corpus of data. The frequency of occurrence data provided in this study and/or that found in Terrell (1974a) are, by themselves, of limited value. They must become a part of a much larger body of data. The fact that such a larger corpus of data does not exist is not as much a criticism of previous phonological studies as it is a tribute to the difficulty encountered in realizing such a study, particularly when dealing with unstructured rapid speech.

3.2 Methodology

The tapes used in this study were all recorded between February, 1975 and August, 1975. They were recorded on high-quality cassette tapes on a Bell and Howell IC Solid State Cassette Recorder. When the actual phonetic transcription of these tapes was being done, however, these cassette tapes were played back through a set of high-quality stereo speakers, as the speaker system in most cassette recorders is somewhat less than ideal.

Five hours of recorded material was then phonetically transcribed. In total, twenty-one informants were used in this study. Table I contains the relevant information concerning these informants.

Of the twenty-one informants, thirteen were female and eight male. They ranged in age from twenty-two years to fifty-five years of age. Their median age was twenty-six. Table II shows the age distribution of these twenty-one informants.

Of all twenty-one informants, all except two have received an education through the university level. The remaining two have partially completed high school. The informants represent five of the six Cuban provinces, with the majority having La Habana as their native province. The relevant data concerning the province of origin of the twenty-one informants is shown in Table III.

All of the informants used in this study are native speakers of MCS, and all are bilingual, also speaking English. With the exception of three informants, whose English is apparently perfect, all have readily noticeable Cuba-Spanish accents in their English.

The five hours of recorded tapes used in this section were recorded at four different times and places.

TABLE I

RELEVANT INFORMATION
TWENTY-ONE INFORMANTS USED IN THIS STUDY

| Informant | Sex | Age | Province |
|---|---|---|---|
| JB | M | 27 | La Habana |
| LB | M | 26 | La Habana |
| MB | F | 27 | Camagüey |
| CC | F | 22 | Camagüey |
| DE | F | 22 | Oriente |
| AF | F | 25 | Oriente |
| RF | M | 25 | Las Villas |
| JG | F | 55 | Matanzas |
| LG | F | 26 | Oriente |
| AGH | F | 26 | La Habana |
| CH | M | 27 | La Habana |
| MVH | F | 24 | La Habana |
| RL | M | 26 | Camagüey |
| AGM | F | 24 | La Habana |
| MVM | F | 40 | La Habana |
| AN | M | 26 | La Habana |
| CP | F | 22 | La Habana |
| EP | F | 25 | Camagüey |
| MVP | M | 44 | La Habana |
| ES | M | 34 | Oriente |
| MS | F | 26 | La Habana |

TABLE II

AGE DISTRIBUTION OF INFORMANTS

| Age range | Number of Informants |
|---|---|
| 20 - 29 | 17 |
| 30 - 39 | 1 |
| 40 - 49 | 2 |
| 50 - 59 | 1 |
| Total Range | 22 - 55 |
| Median Age | 26 |

TABLE III

INFORMANTS' PROVINCES OF ORIGIN

| Province | Number of Informants | % of Total Number of Informants |
|---|---|---|
| La Habana | 11 | 52.40 |
| Camagüey | 4 | 19.05 |
| Oriente | 4 | 19.05 |
| Matanzas | 1 | 4.75 |
| Las Villas | 1 | 4.75 |
| Pinar del Río | 0 | 0 |

The first recording session, in which there were thirteen informants taking part, occurred at a party in February, 1975. Most of these informants were unaware, at that time, that their conversations were being recorded. The environment was completely social. All of the informants were drinking socially, but none were inebriated, as the recording was done during the early portion of the evening. The cassette recorder, with a built-in microphone, was placed in a central location in the room, and the informants were not particularly aware of its presence. There was absolutely no attempt to structure any portion of the evening. The recorder was started when the guests began to arrive; it recorded whoever was within its range, and whatever the person said. After ninety minutes the recorder automatically shut off. The cassette tape was then turned over, restarted, and another ninety minutes of tape was recorded.

The second recording session took place in June, 1975, with two different informants. An informal conversation, of approximately one hour in length, was recorded in a private residence.

The third recording was done in early August, 1975, this time with three different informants. This recording of an informal conversation was approximately one-half hour long, and took place in a private home.

The final tape, of approximately thirty-five minutes duration, was recorded in late August, 1975, in a private apartment. A recording of an informal conversation was again made, this time involving three different informants.

In the last three recording sessions, the eight informants were aware that their conversations were being recorded, but were apparently not overtly affected by this fact.

A phonetic transcription of this taped material was then made, omitting my contribution to all four conversations, and that of another individual who was present at the early August recording, since neither he nor I are native speakers of the Miami-Cuban dialect of Spanish.

The relevant information from the phonetic transcription of the tapes used in this study was then tabulated and analyzed, and these data are presented in sections 3.3 through 3.14 of this chapter.

With the above described methodology in mind, it is perhaps appropriate here to discuss some of the difficulties, limitations, and problems inherent in the procedure followed in this study.

If one is going to study true, unaffected rapid speech, as it occurs in the real world, there are several serious problems which, given our current technical knowledge and a limited amount of financial resources, cannot be effectively overcome. The principal objective in this study, particularly during the first recording session in which thirteen of the twenty-one informants took part, was to record true, unaffected rapid speech--the type of language encountered every day in real-life situations. While the success at obtaining true rapid speech was completely obtained, the price was later paid for this accomplishment, as the taped rapid speech, from which the phonetic transcriptions used to obtain the data presented in this section were made, was somewhat less than ideal.

Most of the reasons for the less than perfect quality of these recorded tapes should be quite obvious: (1) the use of portable cassette recording equipment; (2) the recordings being made in private homes and apartments, rather than in an acoustically perfect recording studio. Also, there are other, perhaps less obvious reasons that the recorded material was less than ideal: (1) the informants, as they

moved about in the course of the evening, continually changed the relative distance between them and the recording device, causing a change in amplitude of their recorded voices on the tape; (2) the informants, as they spoke in a natural environment, changed the degree of loudness with which they spoke, resulting in like fluctuations of amplitude of the recorded material; (3) as often happens in a social situation, two or more people may be talking at the same time. Obviously, any sounds within range of the recording equipment will be recorded, resulting in various portions of incomprehensible material on the tape, which for obvious reasons had to be disregarded during the transcription process.

Given unlimited financial resources, and perhaps a contact within the C.I.A. or some other intelligence group, most of the above problems could have been avoided. Instead of the cassette recorder, each informant, unknown to him, could have had a "bug," i.e. a small unnoticeable recording device, placed on his person, with each of these bugs being programmed to remotely feed into a separate recording device of very high quality. Also, the apartment in which the first recording was done could have been made acoustically perfect in advance of the recording session.

Given the real world, however, the use of the cassette recorder, with a built-in microphone, still seems like the best method. To have used a larger, more conspicuous recording device, would have made the informants more aware that they were being recorded, thereby reducing the naturalness of the linguistic situation. Likewise, the recording could have been done in an acoustically perfect studio, but what was recorded would not have been normal, unaffected rapid speech. Trying to rectify the other above mentioned problems, e.g. having the informants: (1) speak only one at a time; (2) speak in a clear, loud voice; not

move around the room, i.e. all sit around a table and look at the tape recorder, would have obviously adversely affected the validity of the data. While the above mentioned technical problems involved in the recording of the material used in this study must be fully recognized, it is still probably the case that, within the bounds of a limited technology and budget, the methods used to obtain the recordings for this study are the best, if not the only means of obtaining samples of real, unaffected rapid speech, which is, of course, exactly what this section of this study purports to be dealing with.

Besides the above mentioned technical problems, there were also several difficulties involved in the phonetic transcription process and statistical analysis of the data which should be mentioned.

In the phonetic transcription process, certain inaudible, incomprehensible, or unclear portions of the tapes had to be eliminated. Such inaudible or incomprehensible portions, however, provide no problem, since if one cannot hear or understand what is on the tape, one cannot transcribe it.[1] Those sections of the taped material which were "unclear," on the other hand, had to be judged on a somewhat arbitrary basis, in that "partially unclear" portions would probably not all be included or excluded by different individuals doing a phonetic transcription. A conscientious effort was made, however, to include as much of the taped material as possible, and likewise, a strong attempt was made, above all, to be consistent in the case of these somewhat arbitrary decisions.

Another difficulty involved in transcribing this rapid speech taped material was that within the five hours of recorded speech, not 100% of the informants' speech could be classified as rapid speech, i.e. within a given, normal, rapid speech situation, a small percentage

of speech, e.g. while the speaker is thinking and speaking at the same time, or the speaker is attempting to emphasize a point, clearly will be at a slower rate of speed. Since judging which speech is rapid, and which is not would clearly, at least in many cases, be a rather arbitrary process, no attempt to eliminate any of this small portion of slower speech was made in the phonetic transcription process. This small portion of slower speech will, of course, have an effect on the percentages and data given in sections 3.3 through 3.14 of this chapter.

One further statistical difficulty encountered in a study of this type is that of dealing with commonly repeated lexical items or expressions, e.g. entonces, para, ven acá, tú sabes, etc.

The lexical item para appears as [pá] sixty times in the recorded material used in this study. When discussing the different surface manifestations of systematic /r/ in syllable-initial position in MCS rapid speech, there are 1304 occurrences of systematic /r/ in this environment. Since systematic /r/ appears as [ø] in syllable-initial position sixty times, one would be forced to say that in MCS rapid speech, systematic /r/ appears as [ø] in syllable-initial position 4.6% of the time. The fact is, however, that all sixty occurrences of /r/ appearing as [ø] in this environment are occurrences of the lexical item para. The above percentage is misleading, if not completely erroneous. /r/ appearing as [ø] in syllable-initial position is not a phonological process of MCS rapid speech; in five hours of taped material used in this study, in no other lexical item did the process /r/ $\longrightarrow$ [ø] /$___$ occur.

Likewise, the lexical item entonces appeared with great frequency in the recorded material, with its most commonly appearing

surface form as [ẽtṍse], from systematic /entonses/. As was the case with para, the very high frequency of occurrence of entonces will have a significant effect on: (1) the frequency of occurrence of nasal vowels in MCS rapid speech; (2) the frequency of occurrence of /en/ as [ẽ]; (3) the frequency of /on/ as [õ]; (4) the frequency of occurrence of vowel nasalization before [+anterior; +coronal; -sonorant] segments, i.e., before /t/ and /s/; (5) the deletion of systematic /s/ in word-final position.

Another high-frequency lexical item, tú sabes, occurring almost always as [tusáβe], will likewise have a strong effect on the frequency of occurrence of systematic /s/ as [ø] in word-final environments.

A fourth lexical item, ven acá,[2] occurring most frequently as [bẽŋaká], would have a significant effect on the frequency of systematic /n/ appearing as [ŋ] in word-final position, and immediately followed by a syllabic segment.

How such commonly used lexical items as the four discussed immediately above should be handled in a study of this type is not immediately obvious. All four lexical items, and perhaps others, severely affect the percentages of occurrence of various phonological processes of MCS rapid speech; they influence these percentages in a manner out of proportion to the actual frequency of occurrence of these phonological processes.

There are clearly two ways these types of lexical items can be handled: (1) they can be disregarded in tabulation; (2) they can be treated as part of the rapid speech data.

Clearly, the first of the above two alternatives must be rejected as ad hoc, as it is totally arbitrary. If these four lexical

items are to be disregarded, then several (or many) other frequently occurring lexical items could just as well be eliminated, using these same criteria. Such types of decisions are totally arbitrary, and without any linguistic basis.

The alternative left, then, is to include all of these lexical items, which is what has been done in this study. It should, however, be kept in mind, perhaps for future reference, the type of effect that their inclusion may have on the percentages of occurrence which are reported in the appropriate portions of the remainder of this chapter.

## 3.3 The Velar Nasal in MCS Rapid Speech

In standard American Spanish, the velar nasal appears phonetically (as a surface variant of systematic /n/) only in syllable-final position, when immediately followed by a velar consonant. In many American Spanish dialects, however, [ŋ] appears in several other environments. MCS is such a dialect, in which [ŋ] may occur in any phonological environment, with, of course, varying degrees of percentage of occurrence.

The different surface manifestations of the systematic nasal /n/ were recorded and tabulated in the following environments: (1) absolute-final position; (2) word-final position within a breath-group; (3) syllable-final position within a word; (4) syllable-initial position.

Table IV presents the different surface manifestations of systematic /n/ in absolute-final position.

As shown in Table IV, the most frequent surface variant of systematic /n/ in absolute-final position is the velar nasal [ŋ], occurring 83.0% of the time. The other four phonetic variants for systematic /n/ when it occurs in absolute-final position, [n ã ẽ ẽʔ ],[3]

occur in rather insignificant frequencies, 7.3, 4.9, 2.4, and 2.4% respectively.

TABLE IV

PHONETIC VARIANTS OF SYSTEMATIC /n/
IN ABSOLUTE-FINAL POSITION

| Surface Variant | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [ŋ] | 136 | 83.0 |
| [n] | 12 | 7.3 |
| [ã] | 8 | 4.9 |
| [ẽ] | 4 | 2.4 |
| [ẽʔ] | 4 | 2.4 |

The data presented in Table IV show that there must be a rule of nasal velarization of systematic /n/ in absolute-final position for MCS, rapid speech, as shown below in (1):

(1) NASAL VELARIZATION

/n/ → [ŋ] /___##

Based on the data presented in Table IV, this rule, although optional, will occur 83.0% of the time in MCS rapid speech.

In order to account for the nasalized vowels [ã], [ẽ], and [ẽʔ], which according to the data in Table IV occur at a total frequency rate of 9.7%, MCS rapid speech must contain the following two rules, shown below as (2) and (3):

(2) VOWEL NASALIZATION

/V/ → [Ṽ] /___N##

(3) NASAL CONSONANT DELETION

/N/ → [ø] / $\tilde{V}$____##

Rule (2) is obligatory, at least to the degree that in Spanish as in many other languages of the world, a vowel followed by a nasal consonant will obligatorily contain some degree of nasalization.

Rule (3) is optional, and as shown in Table IV, has occurred 9.7% of the time in this speech sample of MCS in absolute-final position.

Table V shows the different phonetic forms of systematic /n/ in word-final environments followed by a consonant, as to whether normal, i.e. standard, nasal assimilation has occurred across the word-boundary, or if the velar nasal [ŋ] has occurred.

TABLE V

PHONETIC VARIANTS OF SYSTEMATIC /n/
IN WORD-FINAL POSITION (992 OCCURRENCES)

| Initial Segment of Following Word | Normal Nasal Assimilation | | Velar Nasal | |
|---|---|---|---|---|
| | Number | Percentage | Number | Percentage |
| Bilabial | 3 | .3 | 81 | 8.1 |
| Labiodental | 1 | .1 | 15 | 1.5 |
| Dental | 2 | .2 | 90 | 9.0 |
| Alveolar | 12 | 1.2 | 128 | 12.9 |
| Palatoalveolar | 2 | .2 | 14 | 1.4 |
| Palatal | 0 | 0 | 0 | 0 |
| Glottal | 0 | 0 | 0 | 0 |
| Totals | 20 | 2.0 | 332 | 33.5 |

From the transcribed tapes used in this study, there was a total of 992 occurrences of systematic /n/ in word-final position followed by

a consonant.[4] Of this total of 992 occurrences, 656 resulted in: (1) the velar nasal [ŋ] (622 occurrences or 62.9%); (2) standard nasal assimilation (20 occurrences or 3.4%). The remaining 336 occurrences of /n/ in this environment, which will be accounted for in Table VII, were phonetically deleted, with prior nasalization of the preceding vowel.

Table V clearly shows that, at least in MCS rapid speech, nasal assimilation across word-boundaries is the exception and not the rule. Standard nasal assimilation occurred in only 2.0% of the total surface manifestations of systematic /n/ in this environment; in the remaining 98.0% of the total occurrences, either the velar nasal occurred, or nasal deletion took place.

Table VI presents the data given previously in Table V, but this time in terms of the percentages of occurrence of the velar nasal versus standard nasal assimilation, relative to the different points of articulation of the initial segment of the following word.

TABLE VI

VELAR NASAL VERSUS NASAL ASSIMILATION
IN WORD-FINAL POSITION

| Initial Segment of Following Word | Total Number of Occurrences | Normal Nasal Assimilation | | Velar Nasal | |
|---|---|---|---|---|---|
| | | No. | % | No. | % |
| Bilabial | 84 | 3 | 3.5 | 81 | 96.5 |
| Labiodental | 16 | 1 | 6.2 | 15 | 93.8 |
| Dental | 92 | 2 | 2.2 | 90 | 97.8 |
| Alveolar | 140 | 12 | 8.6 | 128 | 91.4 |
| Palatoalveolar | 16 | 2 | 12.5 | 14 | 87.5 |
| Palatal | 0 | 0 | 0 | 0 | 0 |
| Glottal | 4 | 0 | 0 | 4 | 100.0 |

Table VI shows that, across word-boundaries, the velar nasal predominates in MCS rapid speech, occurring from 87.5 to 100.0% of the time. These data clearly support the information provided in many other studies of Cuban Spanish phonology which show the velar nasal to occur frequently in word-final environments. The data in Table VI reflect the fact that at word-boundaries, the velar nasal occurs an average of 94.5% of the time, while standard nasal assimilation across word-boundaries occurs only 5.5% of the time.[5]

The data presented in Tables V and VI account for only 65.8% of the total occurrences of systematic /n/ in word-final environments within a breath-group. The remaining 33.7% of the occurrences of underlying /n/ in this environment (i.e., /___#C) are accounted for in Table VII.

The first half of Table VII accounts for the five vowels of Spanish, followed by a nasal consonant, when the vowel has been nasalized and then the nasal consonant has been deleted, as previously discussed in rules (2) and (3) of this chapter. The second half of Table VII presents these same surface variants of /n/, i.e. [$\tilde{V}$], but when they are followed by a glottal stop, i.e. [$\tilde{V}$ʔ].

Table VII shows that the process of vowel nasalization and nasal consonant deletion, with or without a following glottal stop, is quite frequent in MCS rapid speech. While [ŋ] in this word-final environment predominates (62.9%), the [$\tilde{V}$] process (27.7%) and the [$\tilde{V}$ʔ] process (6.0%) together totalling 33.7%, is much more significant than the nasal assimilation process of standard Spanish, which in these data occurred only 3.4% of the time. As the processes resulting in surface manifestations of /N/ as [$\tilde{V}$] or [$\tilde{V}$ʔ] occur in all phonological environments in

TABLE VII

DELETION OF SYSTEMATIC /n/
IN WORD-FINAL ENVIRONMENTS

| Surface Form | Number of Occurrences | Percentage of Occurrences (from total occurrences of /n/ in word-final environments) |
|---|---|---|
| /an/ → [ã] | 40 | 4.0 |
| /en/ → [ẽ] | 116 | 11.7 |
| /in/ → [ĩ] | 0 | 0 |
| /on/ → [õ] | 80 | 8.0 |
| /un/ → [ũ] | 40 | 4.0 |
| /an/ → [ã?] | 8 | 0.8 |
| /en/ → [ẽ?] | 12 | 1.2 |
| /in/ → [ĩ?] | 0 | 0 |
| /on/ → [õ?] | 28 | 2.8 |
| /un/ → [ũ?] | 12 | 1.2 |
| Totals | 336 | 33.7 |

MCS rapid speech, these processes will be discussed more fully at the end of this section, along with the interesting theoretical implications they involve.

The data presented in Tables V, VI, and VII suggest the need for several variable rapid speech rules in the phonological component of MCS.

Tables V and VI show the need for a rule of word-final nasal velarization, shown below as (4):

(4) WORD-FINAL NASAL VELARIZATION (optional)

/N/ → [ŋ] /____#

The above rule, although optional, would occur 62.4% of the time, based on the data used in this chapter.

The other rule suggested by Tables V and VI is that of nasal assimilation, as it occurs in other dialects. This rule is shown below as (5):[6]

(5) NASAL ASSIMILATION (optional)

$$[+\text{nasal}] \rightarrow \begin{bmatrix} \alpha\,\text{cor} \\ \beta\,\text{ant} \\ \gamma\,\text{back} \\ \delta\,\text{dist} \\ \varepsilon\,\text{high} \end{bmatrix} \quad / \underline{\quad\quad}(\#) \quad \begin{bmatrix} -\text{syl} \\ \alpha\,\text{cor} \\ \beta\,\text{ant} \\ \gamma\,\text{back} \\ \delta\,\text{dist} \\ \varepsilon\,\text{high} \end{bmatrix}$$

The above rule of nasal assimilation would be optional, and occur at a rate of 3.4%.

In regard to the above proposed rule of nasal assimilation for MCS, it should be noted that this rule will not account for the occurrence of the velar nasal before a glottal segment in MCS, e.g., un jorobado, 'a hunchback' [uŋhoroβáðo], nor will it account for the nasal, presumably velar, that occurs before a following uvular segment found in other Spanish dialects, e.g., un jorobado [uŋXoroβáðo].

Given the present framework of generative phonology, there is no way to formalize nasal assimilation to a following uvular or glottal segment, with the systematic nasal surfacing as [ŋ]. Nor could we, or perhaps better said, would we want to formalize the rule of nasal assimilation so as to have either a uvular nasal before [X] or a glottal nasal before [h] as a surface output, since uvular nasals and glottal nasals are physiologically impossible.

It is suggested here that rule (5) above captures the facts of nasal assimilation in these dialects, because it captures the fact that the velar nasal, being the most back nasal that is physiologically possible, occurs in these environments.

If, however, a dialect exists where any nasal other than [n] or [ŋ] occurs before [X] or [h], then rule (5), or any other heretofore proposed rule, could not account for such processes.

Table VII shows the need for rules of vowel nasalization and nasal consonant deletion, previously shown as (2) and (3) in this chapter, with a generalization of the environments, as shown below in (6) and (7):

(6) VOWEL NASALIZATION (obligatory)

$/N/ \rightarrow [\tilde{V}] / ____ N\#$

(7) NASAL CONSONANT DELETION (optional)

$/N/ \rightarrow [\emptyset] / \tilde{V} ____ \#$

Rule (7) is optional, and would occur 33.7% of the time.

The percentages of occurrence of the velar nasal versus standard nasal assimilation of the total number of occurrences of systematic /n/ in syllable-final position within a word are shown in Table VIII.

From the total number of 1028 occurrences of /n/ in syllable-final position within a word,[7] a total of 752 of those occurrences resulted in: (1) the velar nasal [ŋ]--433 occurrences; (2) standard nasal assimilation--319 occurrences. The remaining 276 occurrences of /n/ in this environment will be accounted for in Table XI, since in all of these cases, the nasal consonant was deleted.

Table VIII shows that in MCS rapid speech, across syllable-boundaries within a word, nasal assimilation does not predominate as in standard Spanish, but rather, the velar nasal is most frequent in this

TABLE VIII

PHONETIC VARIANTS OF SYSTEMATIC /n/ IN SYLLABLE-FINAL POSITION (1028 OCCURRENCES)

| Following Segment | Standard Nasal Assimilation | | Velar Nasal | |
|---|---|---|---|---|
| | No. | % | No. | % |
| Bilabial | 3 | .3 | 49 | 4.8 |
| Labiodental | 4 | .4 | 16 | 1.6 |
| Dental | 284 | 27.6 | 276 | 26.8 |
| Alveolar | 24 | 2.3 | 76 | 7.4 |
| Palatoalveolar | 4 | .4 | 12 | 1.2 |
| Palatal | 0 | 0 | 0 | 0 |
| Glottal | 0 | 0 | 0 | 0 |
| Totals | 319 | 31.0 | 429 | 41.8 |

environment, occurring 41.8% of the time, while standard nasal assimilation occurs at a frequency rate of only 31.0%. The remaining 26.8% are cases of n-deletion (see Table XI). Although in this environment in MCS rapid speech the velar nasal is most frequent, its higher percentage of occurrence is not nearly as strong as was the case before a pause or before a word-boundary within a breath-group.

Table IX presents a comparison of the occurrences of the velar nasal versus standard nasal assimilation, relative to the point of articulation of the initial segment of the following syllable, using the data previously shown in Table VIII.

Table IX shows that in syllable-final position, within a word, the velar nasal again predominates over nasal assimilation as found in the standard language, but this time one exception must be noted. With the

TABLE IX

VELAR NASAL VERSUS NASAL ASSIMILATION
IN SYLLABLE-FINAL POSITION

| Initial Segment of Following Syllable | Total Number of Occurrences | Standard Nasal Assimilation | | Velar Nasal | |
|---|---|---|---|---|---|
| | | No. | % | No. | % |
| Vowel | 4 | 0 | 0 | 4 | 100.0 |
| Bilabial | 52 | 3 | 5.8 | 49 | 94.2 |
| Labiodental | 20 | 4 | 20.0 | 16 | 80.0 |
| Dental | 560 | 284 | 50.7 | 276 | 49.3 |
| Alveolar | 100 | 24 | 24.0 | 76 | 76.0 |
| Palatoalveolar | 16 | 4 | 25.0 | 12 | 75.0 |
| Palatal | 0 | 0 | 0 | 0 | 0 |
| Glottal | 0 | 0 | 0 | 0 | 0 |

exception of a following dental segment across a syllable-boundary, within a word, the velar nasal occurs from 75.0 to 100.0% of the time. The data in Table IX reflect the fact that across syllable-boundaries within a word, the velar nasal occurs at a frequency rate of 57.6%, while standard nasal assimilation occurs at a rate of 42.4% in this same environment. While the velar nasal is still most frequent in this environment, its domination is not as strong as in absolute-final or word-final positions.[8]

The one exception, as noted in Table IX, where the velar nasal does not occur more frequently than nasal assimilation, is when the initial segment after the syllable-boundary is dental. Since there are only two non-nasal dental segments in MCS, i.e. [t] and [d], differing only by the single feature [voice], the effect of the feature [voice]

was studied in regard to its effect on a preceding nasal segment, in this environment. Table X presents these data.

TABLE X

VELAR NASAL VERSUS DENTAL NASAL
BEFORE DENTAL SEGMENTS

| Initial Dental Segment after Syllable-boundary | Number of Occurrences | Velar Nasal | | Dental Nasal | |
|---|---|---|---|---|---|
| | | No. | % | No. | % |
| [-voice] | 288 | 273 | 98.9 | 19 | 6.6 |
| [+voice] | 272 | 3 | 1.1 | 265 | 97.4 |

Table X clearly suggests that the feature [voice] has a very strong effect on whether a velar nasal or normal nasal assimilation occurs before dental segments. Before the voiced segment [d], the velar nasal occurred only 1.1% of the time. Before voiceless [t], however, the velar nasal occurred 98.9% of the time.[9]

The data presented in Tables VIII and IX account for only 73.1% of the total occurrences of systematic /n/ in syllable-final environments within a word. The remaining 26.8% of the occurrences of underlying /n/ in this environment is accounted for in Table XI.

The first half of Table XI accounts for the five vowels of Spanish followed by a nasal consonant, when this vowel has been nasalized, with a later deletion of this syllable-final nasal consonant (see rules (2) and (3) of this chapter). The remaining half of Table XI presents these same surface variants of /n/, i.e., [$\tilde{V}$], but now when they are followed by a glottal stop, i.e., [$\tilde{V}$ʔ].

Table XI shows that vowel nasalization in syllable-final environments, followed by deletion of the nasal consonant, occurs at a

TABLE XI

DELETION OF SYSTEMATIC /n/ IN SYLLABLE-FINAL ENVIRONMENTS

| Surface Form | Number of Occurrences | Percentage of Occurrences from Total Occurrences of /n/ in Syllable-final Position |
|---|---|---|
| /an/ → [ã] | 72 | 7.0 |
| /en/ → [ẽ] | 84 | 8.1 |
| /in/ → [ĩ] | 4 | .4 |
| /on/ → [õ] | 92 | 8.9 |
| /un/ → [ũ] | 16 | 1.6 |
| /an/ → [ã?] | 4 | .4 |
| /en/ → [ẽ?] | 4 | .4 |
| /in/ → [ĩ?] | 0 | 0 |
| /on/ → [õ?] | 0 | 0 |
| /un/ → [ũ?] | 0 | 0 |
| Totals | 276 | 26.8 |

percentage rate of 26.8. As was the case in word-final position within a breath-group, the velar nasal predominates, 42.2%, but in syllable-final environments, however, nasal assimilation is the second most frequent process, 31.0%, somewhat different to what was shown in word-final environments, in which /VN/ → [Ṽ] occurred more frequently than nasal assimilation. In syllable-final environments, vowel nasalization followed by nasal consonant deletion occurred at a percentage rate of only 26.8.

The data presented in Tables VIII, IX, and XI, once again suggest the need for several variable rapid speech rules in the phonology of MCS.

Tables VIII and IX suggest the need for a rule of syllable-final nasal velarization, shown below as (8):

(8) SYLLABLE-FINAL NASAL VELARIZATION

/N/ → [ŋ] /____$

The above optional rule occurs 42.2% of the time, based on the data used in this study.

Rules (1), (4), and (8) could, of course, be collapsed as shown in (9):

(9) NASAL VELARIZATION

$$/N/ \rightarrow [ŋ] / \underline{\quad} \begin{Bmatrix} \#\# \\ \# \\ \$ \end{Bmatrix} \quad \begin{matrix} (83.0\%) \\ (62.4\%) \\ (42.4\%) \end{matrix}$$

The percentages shown in rule (9) indicate that the percentages of application of this rule are directly proportional to the strength of the boundary involved.

The other rule suggested by Tables VIII and IX is that of nasal assimilation, as previously shown in (5). This rule, also optional, would apply across syllable-boundaries, within a word, 31.0% of the time.

Table XI shows the need for rules of vowel nasalization and nasal consonant deletion, as previously shown in (6) and (7), with an even more general environment, as shown below in (10) and (11):

(10) VOWEL NASALIZATION (obligatory)

/VN/ → [$\tilde{V}$] /____$

(11) NASAL CONSONANT DELETION (optional)

/N/ → [Ø] / $\tilde{V}$____$

Rule (11) is optional, and occurs 26.8% of the time.

Rules (3), (7), and (11) can be collapsed, as shown below in (12):

(12) NASAL CONSONANT DELETION

$$/N/ \rightarrow [\emptyset] / \tilde{V}____ \quad \begin{Bmatrix} \#\# \\ \# \\ \$ \end{Bmatrix} \quad \begin{matrix} (9.7\%) \\ (33.7\%) \\ (26.8\%) \end{matrix}$$

From the percentages shown in rule (12), it can be seen that the rule of NASAL CONSONANT DELETION applies most frequently in word-final environments (33.7%), and least frequently in absolute-final position (9.7%). In syllable-final environments, rule (12) applies at a rate of 26.8%.

Systematic /n/ in syllable-initial position in the taped material used in this study appeared sporadically as [ŋ], as shown in the lexical items in (13):

(13)

| Lexical item | | Phonetic form |
|---|---|---|
| a. cuneta | 'trench' | [kuŋéta] |
| b. maricones | 'queers' | [mariḱóŋeh] |
| c. enamorar | 'to inspire love' | [eŋamorár] |
| d. enamorada | 'in love' | [eŋamoráđa] |
| e. enamoras | 'you inspire love' | [eŋamórah] |
| f. Leninistas | 'Leninists' | [leniŋíhtah] |
| g. vinieron | 'they came' | [biŋyéron] |

Also, in two isolated cases, systematic syllable-initial /n/, as shown below in (14), was phonetically realized just as nasalization on the preceding vowel:

(14)

| Lexical item | Phonetic form |
|---|---|
| a. enamorar | [ẽamorár] |
| b. enamora | [ẽamóra] |

In all but the ten cases shown in (13) and (14)(Leninistas appeared twice), systematic /n/ in syllable-initial position appeared as [n].

In all of the lexical items in (13) and (14), except for cuneta, either a prefix-boundary or a morpheme-boundary is involved, i.e. items (13c), (d), and (e), and items (14a) and (b) all contain the prefix en-; item (13b) contains a morpheme-boundary between the singular surface form maricón and the -es plural-mraking suffix; item (13g) contains a morpheme-boundary between the irregular preterite stem vin- and the third person plural marker. It is possible in all these cases (excluding cuneta) that the nasal velarization process might be affected by the presence of these boundaries.

Since the process of vowel nasalization and following nasal consonant deletion appears to be a rather frequent process in MCS, occurring 33.7% of the time in word-final environments, and 26.8% of the time in syllable-final position, the question arises as to whether the segment following the syllable-boundary or word-boundary has any effect on these two previously mentioned processes.

Tables XII through XVI analyze the five Spanish vowels, relative to the following segment, in all cases where the process of vowel nasalization and a following deletion of the nasal consonant has taken place.

Table XII shows that the process /an/ ⇒ [ã(ʔ)] occurs:[10] (1) most frequently in syllable-final position, 54.3% (51.4 and 2.9%); (2) word-finally before vowels at a rate of 28.4% versus 65.9% before a following consonant.

Table XIII shows that the process /en/ ⇒ [ẽ(ʔ)] occurs:
(1) most frequently in word-final position within a breath-group, 49.2% (45.8 and 3.4%), although this same process occurs almost as frequently,

TABLE XII

SEGMENTS FOLLOWING /an/ WHEN IT APPEARS AS [ã] or [ãʔ]

| Following Segment | [ã] /___# No. | % | [ã] /___$ No. | % | [ãʔ] /___# No. | % | [ãʔ] /___$ No. | % |
|---|---|---|---|---|---|---|---|---|
| ## | | | | | | | | |
| [a] | 16 | 11.3 | | | | | | |
| [i] | 12 | 8.5 | | | | | | |
| [u] | 4 | 2.9 | | | | | | |
| [t] | 8 | 5.7 | 8 | 5.7 | | | 4 | 2.9 |
| [d] | | | 60 | 42.8 | | | | |
| [s] | | | 4 | 2.9 | | | | |
| [l] | 4 | 2.9 | | | 8 | 5.8 | | |
| [k] | 4 | 2.9 | — | — | — | — | — | — |
| Totals | 48 | 34.2 | 72 | 51.4 | 8 | 5.8 | 4 | 2.9 |

42.4% (40.7 and 1.7%), in syllable-final environments within a word; (2) before vowels at a percentage rate of 17.0 versus 74.5% before a following consonant.

Table XIV, although dealing with only four occurrences, shows that the process /in/ ⇒ [ĩ(ʔ)] occurred most frequently in syllable-final environments within a word, 75.0%, and that all four occurrences of this process took place before the consonant [f].

Table XV shows that the process /un/ ⇒ [ũ(ʔ)] occurs: (1) most frequently in word-final position within a breath-group, 81.5% (62.6% and 18.9%); (2) before vowels at a rate of 12.6% versus 87.4% before a following consonant.

TABLE XIII

SEGMENTS FOLLOWING /en/ WHEN IT APPEARS AS [ẽ] or [ẽʔ]

| Following Segment | [ẽ] /___## No. | % | [ẽ] /___# No. | % | [ẽ] /___$ No. | % | [ẽʔ] /___## No. | % | [ẽʔ] /___# No. | % | [ẽʔ] /___$ No. | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ## | 4 | 1.7 | | | | | 4 | 1.7 | | | | |
| [a] | | | 12 | 5.1 | | | | | 4 | 1.7 | | |
| [e] | | | 20 | 8.5 | | | | | | | | |
| [u] | | | 4 | 1.7 | | | | | | | | |
| [m] | | | 20 | 8.5 | | | | | | | | |
| [t] | | | | | 52 | 22.1 | | | | | 4 | 1.7 |
| [d] | | | 4 | 1.7 | 8 | 3.4 | | | | | | |
| [s] | | | | | 24 | 10.1 | | | 4 | 1.7 | | |
| [l] | | | 12 | 5.1 | 4 | 1.7 | | | | | | |
| [r̃] | | | 4 | 1.7 | | | | | | | | |
| [c̃] | | | 4 | 1.7 | | | | | | | | |
| [y(t)] | | | | | 8 | 3.4 | | | | | | |
| [k] | | | 24 | 10.1 | | | | | | | | |
| [ɛ] | — | — | 4 | — | — | — | — | — | — | — | — | — |
| Totals | 4 | 1.7 | 108 | 45.8 | 96 | 40.7 | 4 | 1.7 | 8 | 3.4 | 4 | 1.7 |

TABLE XIV

SEGMENTS FOLLOWING /in/ WHEN IT APPEARS AS [ĩ] or [ĩʔ]

| Following Segment | [ĩ] /___## No. | % | [ĩ] /___# No. | % | [ĩ] /___$ No. | % | [ĩʔ] /___## No. | % | [ĩʔ] /___# No. | % | [ĩʔ] /___$ No. | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [f] | — | — | 1 | 25.0 | 3 | 75.0 | — | — | — | — | — | — |
| Total | 0 | 0 | 1 | 25.0 | 3 | 75.0 | 0 | 0 | 0 | 0 | 0 | 0 |

TABLE XV

SEGMENTS FOLLOWING /un/ WHEN IT APPEARS AS [ũ] or [ũʔ]

| Following Segment | [ũ] /__## No. | % | [ũ] /__# No. | % | [ũ] /__$ No. | % | [ũʔ] /__## No. | % | [ũʔ] /__# No. | % | [ũʔ] /__$ No. | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [e] | | | 4 | 6.3 | | | | | 4 | 6.3 | | |
| [p] | | | 8 | 12.4 | | | | | 4. | 6.3 | | |
| [b] | | | 4 | 6.3 | | | | | | | | |
| [t] | | | | | 4 | 6.3 | | | 4 | 6.3 | | |
| [d] | | | 12 | 18.7 | | | | | | | | |
| [l] | | | 4 | 6.3 | | | | | | | | |
| [r] | | | 4 | 6.3 | | | | | | | | |
| [n] | | | 4 | 6.3 | | | | | | | | |
| [k] | — | — | — | — | 8 | 12.4 | — | — | — | — | — | — |
| Totals | 0 | 0 | 40 | 62.6 | 12 | 18.7 | 0 | 0 | 12 | 18.9 | 0 | 0 |

Table XVI shows that the process /on/⇒[õ(?)] occurs: (1) most frequently in word-final environments within a breath-group, 52.0% (40.0% and 12.0%), although this same process occurs almost as frequently, 46.0%, in syllable-final environments within a word; (2) before vowels at a rate of 28.0%, versus 72.0% before a following consonant.

Table XVII compares the rates of occurrence of the process /VN/ ⇒ [Ṽ] before the different vowels of Spanish.

There appear to be no substantive conclusions which can be drawn from the data in Table XVII, relative to which vowels or class of vowels act in any significant way toward affecting the process /VN/⇒ [Ṽ]. This process occurs most frequently before [-high] vowels, 94.8% of the

TABLE XVI

SEGMENTS FOLLOWING /on/ WHEN IT APPEARS AS [õ] OR [õ ʔ]

| Following Segment | [õ] /__## No. | % | [õ] /__# No. | % | [õ] /__$ No. | % | [õ ʔ] /__## No. | % | [õ ʔ] /__# No. | % | [õ ʔ] /__$ No. | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| [a] | | | 8 | 4.0 | | | | | 4 | 2.0 | | |
| [e] | | | 20 | 10.0 | | | | | | | | |
| [i] | | | | | | | | | | | | |
| [o] | | | 8 | 4.0 | | | | | | | | |
| [u] | | | 12 | 6.0 | | | | | 4 | 2.0 | | |
| [p] | | | • | | | | | | 4 | 2.0 | | |
| [b] | | | | | | | | | 4 | 2.0 | | |
| [m] | | | 4 | 2.0 | | | | | | | | |
| [f] | | | 4 | 2.0 | | | | | | | | |
| [t] | | | | | 4 | 2.0 | | | | | | |
| [d] | | | 4 | 2.0 | 20 | 10.0 | | | | | | |
| [s] | | | 8 | 4.0 | 60 | 30.0 | | | 4 | 2.0 | | |
| [l] | | | 12 | 6.0 | | | | | 4 | 2.0 | | |
| [č] | | | | | 4 | 2.0 | | | | | | |
| [k] | — | — | — | — | 4 | 2.0 | — | — | — | — | — | — |
| Totals | 0 | 0 | 80 | 40.0 | 92 | 46.0 | 0 | 0 | 24 | 12.0 | 0 | 0 |

total occurrences, but it is suggested that this percentage is merely indicative of the phonotactics of Spanish which do not favor [+ high] vowels plus nasals in word-final environments.

Table XVIII compares the rates of occurrence of the process /VN/⇒[Ṽ], relative to the type of consonant which follows.

TABLE XVII

VOWEL NASALIZATION AND NASAL DELETION BEFORE VOWELS

| Following Vowel | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [a] | 32 | 21.1 |
| [e] | 52 | 34.2 |
| [i] | 0 | 0 |
| [o] | 60 | 39.5 |
| [u] | 8 | 5.2 |
| Totals | 152 | 100.0 |

From the data presented in Table XVIII, the following observations are noted, relative to the process /VN/ ⇒ [$\tilde{V}$]: (1) This process takes place before [+anterior] segments at a rate of 87.4%; (2) The process occurs before [+coronal] segments at a rate of 77.3%; (3) Before [+anterior; +coronal] segments at a rate of 75.6%; (4) Before [-sonorant] segments 80.6% of the time; (5) Before [+consonantal] segments 100% of the time; (6) Before [+continuant] segments 37.0% of the time, or conversely, before [-continuant] segments at a rate of 63.0%. The natural class before which the process /VN/ ⇒ [$\tilde{V}$] occurs would seem to be [+anterior; +coronal; -sonorant; -continuant], before which the above process occurs at a rate of 41.2%. Since, however, the significance of the above natural class, particularly in light of the less than significant percentage of occurrence (41.2%) is somewhat questionable, a more meaningful statement relative to the data given in Table XVIII would be: [+anterior; +coronal] segments appear to be a

TABLE XVIII

VOWEL NASALIZATION AND NASAL DELETION BEFORE CONSONANTS

| Following Consonant | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [p] | 16 | 3.3 |
| [b] | 8 | 1.7 |
| [m] | 24 | 5.1 |
| [f] | 8 | 1.7 |
| [t] | 88 | 18.5 |
| [d] | 108 | 22.7 |
| [s] | 104 | 21.8 |
| [n] | 4 | 0.8 |
| [l] | 48 | 10.1 |
| [r̃] | 8 | 1.7 |
| [č] | 8 | 1.7 |
| [y] | 8 | 1.7 |
| [k] | 40 | 8.4 |
| [g] | 4 | 0.8 |
| Totals | 476 | 100.0 |

conditioning factor before which the processes of vowel nasalization followed by deletion of the nasal consonant occurs, across both syllable-boundaries within a word, and across word-boundaries, before which the above mentioned processes occur at a rate of 75.6%. It seems that the blade of the tongue and the region of the oral cavity between the lips and the alveolar ridge, are a rather strong conditioning factor on the process of /VN/ ⇒ [Ṽ].

The presence of the velar nasal in environments other than before a following velar segment is a well-known and well-documented phenomenon in Cuban Spanish, as well as in other Spanish dialects. The processes of vowel nasalization followed by deletion of the nasal consonant, though less well-documented, has previously appeared in the literature concerning Cuban Spanish, e.g. Isbaşescu (1968a). The presence of the velar nasal, which is highly-marked and rather less common in languages of the world, in contexts other than before velar consonants, has always been rather unexplainable. With the available evidence now showing the process /VN/ ⇒ [Ṽ] to be rather common in Cuban Spanish dialects, the question arises as to the relatedness of these two phenomena, i.e. /VN/ ⇒ [Ṽ], and the appearance of [ŋ] in contexts other than before velar consonants. The precise question that arises is whether a significant percentage of what has heretofore been reported as a velar nasal was, in reality, the velar nasal, or was in actuality, a nasalized vowel.

For some reason, it seems that nasalized vowels are often perceived as being followed by velar nasals.[11] It seems logical, or at least explainable, that nasalized vowels should be perceived as velar nasals, since during the production of nasal vowels, when the velum is lowered, the velum provides the most prominent obstruction in the oral cavity. In the production of non-velar nasal consonants, however, the velum provides only a secondary obstruction, the main obstruction being complete closure somewhere anterior to the velum. These facts would perhaps help to explain why nasal vowels are perceived as being followed by velar nasals, but that non-velar nasal consonants are not perceived as such.

If it is the case that we do perceive nasalized vowels as [$\tilde{V}$ŋ], then it is also possible that what has been frequently reported in Cuban Spanish as [ŋ] may have been, in reality, a nasalized vowel. If this suggestion were empirically testable, then many of the theoretical problems concerned with the presence of the velar nasal would be somewhat diminished, since, particularly in rapid speech, nasalized vowels are less marked, less complex, and more frequent among the world's languages than is the velar nasal. Systematic /n/ nasalizing a preceding vowel and then being deleted, especially in rapid speech, certainly seems more natural than replacing systematic /n/ with the more complex, more highly-marked velar nasal [ŋ].

Another plausible explanation for what has been reported as a velar nasal is that after the nasal consonant has been deleted, a glottal stop is inserted, resulting in the string [$\tilde{V}$ʔ]; this string, since it is quite possible that the glottal stop is perceived as being velar, could easily be perceived as [$\tilde{V}$ŋ]. Recall that the presence of [ʔ] was reported in Tables IV, VII, and XI of this chapter.

3.4 Voicing of Intervocalic Stops

The voicing of /ptk/ in intervocalic environments in MCS rapid speech, by speakers from the province of La Habana, was first reported in Saciuk (1974).

In transcribing the tapes used in this study, instances of voicing of intervocalic /ptk/ were recorded in regard to the preceding vowel, which could potentially somehow be a conditioning factor. These data are reported in Table XIX.

Table XIX shows that, in the five hours of recorded material used in this study, there were 115 occurrences of voicing of /ptk/ in

TABLE XIX

VOICING OF INTERVOCALIC STOPS

| Segment | | Preceded by [a] | | Preceded by [e] | | Preceded by [i] | | Preceded by [o] | | Preceded by [u] | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | No. | % | No. | % | No. | % | No. | % | No. | % |
| /p/ | [b] | 9 | 7.8 | 0 | 0 | 0 | 0 | 5 | 4.3 | 0 | 0 |
| /t/ | [d] | 4 | 3.5 | 7 | 6.0 | 0 | 0 | 8 | 7.0 | 0 | 0 |
| /k/ | [g] | 16 | 13.9 | 41 | 35.7 | 8 | 7.0 | 12 | 10.4 | 5 | 4.4 |
| Totals | | 29 | 25.2 | 48 | 41.7 | 8 | 7.0 | 25 | 21.7 | 5 | 4.4 |

intervocalic environments. Since it would be counterproductive, the total number of occurrences of /ptk/ in intervocalic environments was not tabulated. Of the total number of occurrences, the 115 cases of voicing of /ptk/ between vowels would certainly represent a less than 1.0% frequency of occurrence.

Table XIX shows that intervocalic /k/ was most frequently voiced (82 occurrences--71.3%). These data are supported by Isbaşescu (1968a) who mentions a few cases of voicing of only /k/. It should be pointed out, however, that the lexical item que was very frequently pronounced as [gé]; the frequency of this particular lexical item would tend to severely skew these data.

Table XIX also shows that /ptk/ was voiced between vowels most frequently when the preceding vowel was [e] (48 occurrences--41.7%). Table XIX also shows that intervocalic voicing of /ptk/ took place when the preceding vowel was [-high] 88.6% of the time. This high percentage, however, is probably a fortuitous coincidence, reflecting not the fact that [-high] vowels condition intervocalic voicing of /ptk/, but rather

that the distribution or occurrence of [+high] vowels in Spanish is less than that of [-high] vowels.

Saciuk (1974), as previously mentioned, reported that intervocalic voicing of /ptk/ was almost exclusively limited to MCS speakers whose native province was La Habana. Table XX reports the occurrences of /ptk/ → [ð đ ɣ] in the environment V___V by speaker's province of origin.

TABLE XX

DISTRIBUTION OF OCCURRENCES OF INTERVOCALIC VOICING OF /ptk/ BY SPEAKER'S PROVINCE

| Province of Origin | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| Camagüey | 3 | 2.6 |
| La Habana | 104 | 90.4 |
| Matanzas | 0 | 0 |
| Oriente | 0 | 0 |
| Pinar del Río | 0 | 0 |
| Las Villas | 8 | 7.0 |

Table XX confirms the report of Saciuk (1974), showing that the intervocalic voicing of /ptk/ occurred 90.4% of the time among MCS speakers originating from the province of La Habana.

Among the three speakers from Camagüey and Las Villas who account for 9.6% of the instances of intervocalic voicing of /ptk/, it should be reported that all three of these speakers have been continually exposed to the speech of MCS speakers from the province of La Habana.

Table XIX suggests the following optional rule for MCS rapid speech, particularly in speakers originating in La Habana province:

(15) /ptk/ VOICING (optional)

$$\left\{ \begin{matrix} p \\ t \\ k \end{matrix} \right\} \rightarrow [+\text{voice}] \; / \text{V} ___ \text{V}$$

After the application of rule (15), the rule of spirantization of voiced obstruents will then apply, producing [β̞ ð̞ ɣ̞].

## 3.5 Phonetic Manifestations of Systematic /s/

In many American Spanish dialects, systematic /s/ surfaces in its underlying form, i.e. as a [+strident] sibilant. In some American Spanish dialects, however, including MCS, systematic /s/ may also appear phonetically as the [-strident] fricative [h], or as [ø], particularly in syllable-final environments.

The different surface manifestations of systematic /s/ were recorded and tabulated in the following environments: (1) absolute-final position; (2) word-final position within a breath-group; (3) syllable-final position within a word; (4) syllable-initial position.

Table XXI presents the different surface manifestations of systematic /s/ in absolute-final position. It shows that in this environment the most frequent surface variant of systematic /s/ is [ø] (74.4%); the second most frequent surface manifestation is [h] (21.8%); the least common phonetic form is [s] (3.8%).[12]

The data in Table XXI suggest the following optional rule for MCS rapid speech, with the percentages of occurrence given for each portion of the rule:

TABLE XXI

PHONETIC VARIANTS OF SYSTEMATIC /s/ IN ABSOLUTE-FINAL POSITION

| Surface Variant | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [s] | 24 | 3.8 |
| [h] | 136 | 21.8 |
| [ø] | 465 | 74.4 |
| Totals | 625 | 100.0 |

(16) ABSOLUTE-FINAL /s/ ASPIRATION OR DELETION

$$/s/ \rightarrow \begin{cases} ø & (74.4\%) \\ h & (21.8\%) \end{cases} \quad /___\#\#$$

Rule (16), although technically optional, accounts for 96.2% of the total surface manifestations of systematic /s/ in the stated environment.

Table XXII presents the different percentages of occurrence of systematic /s/ in word-final position within a breath-group, relative to the initial segment of the following word, based on the total of occurrences of systematic /s/ (1906).

Table XXII shows that the most frequent surface variant of systematic /s/ in word-final environments within a breath-group is [ø], occurring at a rate of 54.2%; the second most frequent surface variant is [h] (43.0%); by far the least frequent surface manifestation of /s/ in this environment is [s] (2.8%).

TABLE XXII

PHONETIC VARIANTS OF SYSTEMATIC /s/ IN WORD-FINAL POSITION (1906 OCCURRENCES)

| Following Segment | [s] No. | [s] % | [h] No. | [h] % | [ø] No. | [ø] % |
|---|---|---|---|---|---|---|
| [+syllabic] | 16 | 0.8 | 207 | 10.9 | 309 | 16.2 |
| [-syllabic, +sonorant] | 8 | 0.4 | 168 | 8.9 | 148 | 7.8 |
| [p] | 0 | 0 | 52 | 2.7 | 65 | 3.4 |
| [t] | 0 | 0 | 28 | 1.4 | 40 | 2.1 |
| [k] | 15 | 0.8 | 137 | 7.3 | 181 | 9.5 |
| [p̚] | 0 | 0 | 68 | 3.6 | 77 | 4.0 |
| [t̚] | 0 | 0 | 60 | 3.1 | 147 | 7.7 |
| [k̚] | 0 | 0 | 12 | 0.6 | 12 | 0.6 |
| [f] | 0 | 0 | 12 | 0.6 | 19 | 1.0 |
| [s] | 16 | 0.8 | 68 | 3.6 | 29 | 1.5 |
| [h] | 0 | 0 | 0 | 0 | 2 | 0.1 |
| [č] | 0 | 0 | 5 | 0.3 | 5 | 0.3 |
| Totals | 55 | 2.8 | 817 | 43.0 | 1034 | 54.2 |

The data in Table XXII suggest the need for the following rule in MCS rapid speech:

(17) WORD-FINAL /s/ ASPIRATION OR DELETION

$$/s/ \rightarrow \begin{Bmatrix} \emptyset & (54.2\%) \\ h & (43.0\%) \end{Bmatrix} / ___ \#$$

Rule (17), although optional, accounts for 97.2% of the surface manifestations of systematic /s/ in word-final environments within a breath-group.

By a generalization of the environment, and by computation of an arithmetic mean for the percentages of occurrence, rules (16) and (17) can be collapsed, as shown below:

(18) /s/ DELETION OR ASPIRATION AT ALL WORD-BOUNDARIES

$$/s/ \rightarrow \begin{cases} \emptyset & (64.3\%) \\ h & (32.4\%) \end{cases} \quad /___\#$$

Rule (18), while still optional in rapid speech, accounts for 96.7% of the total number of occurrences of systematic /s/ at all word-boundaries, i.e., this optional rule fails to occur in MCS rapid speech only 3.3% of the time, based on the data used in this study.

Table XXIII shows the percentages of occurrence of the surface variants [s h ∅] of systematic /s/ in word-final environments within a breath-group, relative to the initial segment of the immediately following lexical item, based on the individual environment of occurrence in each case.

From the presentation of the data in Table XXIII, it can be seen that in no case was the strident sibilant [s] the most frequent surface variant before any other following segment within the breath-group. In its highest frequency of occurrence, before the obstruent [s], the surface variant [s] occurred only 14.2% of the time. It should be noted here, however, that any time [s] occurs as a surface variant of /s/ before a following [s], that what is involved is not rapid speech, i.e., a surface form such as [lossigáro] for los cigarros is impossible in rapid speech; in other words, all 16 occurrences of [s] before [s] must have come from affected speech or perhaps emphatic speech.[13] Therefore, the highest rapid speech percentage of occurrence of [s] was before a following [k], only 4.5%

TABLE XXIII

PERCENTAGE OF OCCURRENCE OF SURFACE VARIANTS OF /s/ IN WORD-FINAL POSITION RELATIVE TO FOLLOWING [+segment]

| Following Segment | Occurrences of /s/ before segment in question | | Occurrences of [s] before segment in question | | Occurrences of [h] before segment in question | | Occurrences of [ø] before segment in question | |
|---|---|---|---|---|---|---|---|---|
| | No. | % (of total) | No. | % | No. | % | No. | % |
| [ syllabic] | 532 | 27.9 | 16 | 3.0 | 207 | 38.9 | 309 | 58.1 |
| [-syllabic +sonorant] | 324 | 17.1 | 8 | 2.5 | 168 | 51.8 | 148 | 45.7 |
| [p] | 117 | 6.1 | 0 | 0 | 52 | 44.4 | 65 | 55.6 |
| [t] | 68 | 3.5 | 0 | 0 | 28 | 41.1 | 40 | 58.9 |
| [k] | 333 | 17.6 | 15 | 4.5 | 137 | 41.1 | 181 | 54.4 |
| [ƀ] | 145 | 7.6 | 0 | 0 | 68 | 46.9 | 77 | 53.1 |
| [ɗ] | 207 | 10.8 | 0 | 0 | 60 | 29.0 | 147 | 71.0 |
| [ɠ] | 24 | 1.2 | 0 | 0 | 12 | 50.0 | 12 | 50.0 |
| [f] | 31 | 1.6 | 0 | 0 | 12 | 38.7 | 19 | 61.3 |
| [s] | 113 | 5.9 | 16 | 14.2 | 68 | 60.2 | 29 | 25.6 |
| [h] | 2 | 0.1 | 0 | 0 | 0 | 0 | 2 | 100.0 |
| [ƈ] | 10 | 0.6 | 0 | 0 | 5 | 50.0 | 5 | 50.0 |

According to Table XXIII, the [-strident] fricative [h] occurred much more frequently, before all following segments than [s], excepting before the segment [h]. In only two cases, however, before a following [-syllabic; +sonorant] segment and before [s], was [h] the most frequent surface variant, occurring at percentage rates of 51.8 and 60.2% respectively. The possibility that the segment following the surface

variant [h] of /s/ might somehow be conditioning the appearance of this surface variant must apparently be abandoned here, since liguids, glides, nasals, and [h] do not form any significant natural class, as they share only the features [-syllabic] and [-tense].

It can also be seen in Table XXIII that the surface variant [ø] of systematic /s/ was consistently the most frequent form, in terms of phonetic manifestation, before all other segments except those that are [-syllabic; +sonorant] and before the segment [s].

Table XXIII greatly emphasizes the fact that in word-final environments within a breath-group in MCS rapid speech, the systematic phoneme /s/ is most frequently realized as [ø].

Table XXIV shows the different percentages of occurrence of surface variants of systematic /s/ in syllable-final environments within a word in MCS rapid speech, relative to the initial segment of the following syllable, based on all 884 occurrences of systematic /s/.

TABLE XXIV

PHONETIC VARIANTS OF SYSTEMATIC /s/ IN SYLLABLE-FINAL ENVIRONMENTS WITHIN A WORD (884 OCCURRENCES)

| Following Segment | [s] No. | [s] % | [h] No. | [h] % | [ø] No. | [ø] % |
|---|---|---|---|---|---|---|
| [-syllabic +sonorant] | 0 | 0 | 20 | 2.2 | 5 | 0.6 |
| [p] | 4 | 0.5 | 64 | 7.2 | 37 | 4.1 |
| [t] | 64 | 7.2 | 481 | 54.5 | 137 | 15.6 |
| [k] | 15 | 1.7 | 57 | 6.4 | 0 | 0 |
| Totals | 83 | 9.4 | 622 | 70.3 | 179 | 20.3 |

The data from Table XXIV clearly indicate that the most frequent surface variant of systematic /s/ in syllable-final environments within a word is the [-strident] fricative [h], occurring at a rate of 70.3%.[14] The second most frequent surface variant is [ø], 20.3%; the least frequently occurring surface manifestation in this environment is [s], 9.4%.[15]

The data in Table XXIV suggest the need for the following phonological rule for MCS rapid speech:

(19) SYLLABLE-FINAL S-ASPIRATION OR DELETION

$$/s/ \rightarrow \begin{cases} ø & (20.3\%) \\ h & (70.3\%) \end{cases} \quad /___\$$$

Rule (19), although optional, accounts for 90.6% of the surface manifestations of systematic /s/ in the stated environment.

By a further generalization of the environments, and by computation of an arithmetic mean for the percentages of occurrence, rules (16), (17), and (19) can now be collapsed, as shown in (20):

(20) S-DELETION OR ASPIRATION AT SYLLABLE-BOUNDARIES

$$/s/ \rightarrow \begin{cases} ø & (49.6\%) \\ h & (45.0\%) \end{cases} \quad /___\$$$

Rule (20), while only optional in MCS rapid speech, accounts for 94.6% of the total number of occurrences of systematic /s/ in all syllable-final environments, i.e., this optional rule fails to occur only 5.4% of the time.

Rule (20) shows, furthermore, that in the final analysis, when viewing the processes of s-deletion and s-aspiration in all non-syllable-initial environments, that s-aspiration and s-deletion occur at

approximately the same frequency (49.6% versus 45.0%), and that they are both extremely common and productive processes in the rapid speech of this dialect. It is equally clear, on the other hand, that the non-application of rule (20) is very infrequent in MCS rapid speech, i.e., that systematic /s/ surfacing without undergoing the application of rule (20) is uncommon, relatively rare, and unnatural in this style of speech.

Table XXV shows the percentages of occurrence of the surface variants of systematic /s/ in syllable-final environments within a word, relative to the immediately following segment, based on the individual environment of occurrence in each case.

TABLE XV

PERCENTAGE OF OCCURRENCE OF SURFACE VARIANTS OF /s/ IN SYLLABLE-FINAL ENVIRONMENTS RELATIVE TO THE FOLLOWING SEGMENT

| Following Segment | Occurrences of /s/ before segment in question | | Occurrences of [s] before segment in question | | Occurrences of [h] before segment in question | | Occurrences of [ø] before segment in question | |
|---|---|---|---|---|---|---|---|---|
| | No. | % (of total) | No. | % | No. | % | No. | % |
| [-syllabic +sonorant] | 25 | 2.8 | 0 | 0 | 20 | 80.0 | 5 | 20.0 |
| [p] | 105 | 11.9 | 4 | 3.8 | 64 | 61.1 | 37 | 35.1 |
| [t] | 682 | 77.1 | 64 | 9.4 | 481 | 70.5 | 137 | 20.1 |
| [k] | 72 | 8.1 | 15 | 20.8 | 57 | 79.2 | 0 | 0 |

From the data presented in Table XXV, it can be seen, once again, that in no instance does the [+strident] sibilant [s] appear as the most frequent surface variant before any other following segment after the syllable-boundary within the word. In its highest frequency of

occurrence, before the [+back] obstruent [k], the surface variant [s] occurred 20.8% of the time; its second most frequent occurrence took place before [t], 9.4%; its third most frequent before [p], 3.8%. Based on these data, one might conclude that the frequency of occurrence of the surface variant [s] is directly proportional to the frontness of the following segment in syllable-final environments within a word. This type of conclusion, however, does not seem intuitively correct, and is probably only a fortuitous coincidence, most likely because of the limited data under analysis here.

According to Table XXV, the [Ø] phonetic manifestation of systematic /s/ in the stated environment occurred more frequently before all following segments than did [s], excepting before the [ back] obstruent [k]. In no case, however, in syllable-final environments within a word, was [Ø] the most frequently occurring surface variant of systematic /s/. The surface realization [Ø] of systematic /s/ occurred at percentage rates of 35.1, 20.1, and 20.0 before a following [p], [t], and [-syllabic; +sonorant] segment, respectively. There appears to be nothing in these data that would indicate that any particular following segment had any significant effect on the appearance of the surface form [Ø] of the underlying phoneme /s/.

Also from Table XXV can be seen that the [-strident] sibilant [h] was, in every case, the most frequently occurring surface variant of systematic /s/ in the stated environment, occurring at percentage rates of from 61.1 to 80.0. Again, there appears to be nothing in the data under analysis here that would indicate that the following segment might have a regressive influence on the surface manifestation of the variant [h] of /s/.

What these data do convincingly indicate, however, is that those who claim that speakers of Cuban Spanish never delete /s/ in syllable-final environments within a word, or that [s] is frequent in this environment, or that those who delete systematic /s/ before a consonant (within a word) are low-class, uneducated, black, guajiros, etc., are simply wrong--as none of the informants used in this study belong to any of these prejudicial categories.

Table XXVI presents a summary of the percentages of occurrence of the surface forms of systematic /s/ in all environments. It strongly reinforces the fact that /s/ does not commonly appear at the surface level in MCS rapid speech in any non-syllable-initial environment, and that a rule such as that previously shown in (20) accounts for a very frequent, common, and productive phonological process in MCS, since the surface forms [h] and [ø] of systematic /s/ account for 94.7% of the total surface variants. Based on these data, those who claim that [s] is frequent in any non-syllable-initial environment, or that [ø] or [h] occurs, but is infrequent, vulgar, inculta, rústica, etc., are again simply mistaken--the surface manifestations [ø] and [h] are the rule, and [s] is the exception.

TABLE XXVI

PERCENTAGES OF OCCURRENCE OF THE SURFACE VARIANTS OF /s/ IN ALL ENVIRONMENTS

| Environment | [s] | [h] | [ø] |
|---|---|---|---|
| Absolute-final | 3.8 | 21.8 | 74.4 |
| Word-final | 2.8 | 43.0 | 54.2 |
| Syllable-final | 9.3 | 70.3 | 20.3 |
| Average | 5.3 | 45.0 | 49.7 |

The remaining environment in which systematic /s/ must be accounted for is syllable-initial. In the five hours of taped material under analysis in this study, there were 25 occurrences of /s/ in syllable-initial position that were not the [+strident] sibilant [s]. All 25 of these occurrences were as the [-strident] fricative [h]. Examples taken from these tapes are shown in (21):

(21)

| Lexical item | Phonetic realization |
|---|---|
| eso 'that' | [ého] |
| pasado 'past' | [paháɸo] |
| desesperaste 'you lost hope' | [deheperáhte] |
| pasa 'he passes' | [páha] |
| enseñando 'teaching' | [eŋheñándo] |
| esas 'those' | [éha] |

The data in (21) suggest the need for an optional rule of syllable-initial s-aspiration for MCS rapid speech, such as shown in (22):

(22) SYLLABLE-INITIAL S-ASPIRATION (optional)

/s/ → [h] /$____

A rule such as expressed in (22) would, of course, be infrequent, since 25 occurrences of this process in five hours of conversation would amount to a very small percentage. The occurrence of this process in MCS is interesting, however, in light of the fact that syllable-initial /s/ aspiration is apparently common in Dominican Spanish, cf. Jiménez Sabater (1975) and Henríquez Ureña (1975), and also occurs in Puerto Rican Spanish, cf. Malaret (1955) and Navarro Tomás (1966).[16] With regard to this phenomenon, what we may be witnessing here is the spread of a phonological process.

## 3.6 Final Consonant Deletion

In American Spanish, the only possible word-final segments are /n d r l s x~h/. Of these, the phonetic manifestations of /n r l s/ are discussed in sections 3.3, 3.10,3, 3.10.1, and 3.5 respectively of this chapter. The remaining two, /d/ and /h/ will be discussed in this section.

### 3.6.1 /h/ in Word-final Position

Of the dozen or so words in the lexicon of Spanish that end in the segment /h/ (i.e., in the grapheme j) only one of these lexical items is commonly heard in MCS, reloj 'clock' or 'watch.' In this lexical item, however, in all styles or levels of speech, the word-final segment /h/ is realized phonetically as [Ø], i.e., reloj appears as [r̃elóˀ] (as is the case in many other Spanish dialects). Therefore, the following rule, shown as (23), would be needed in all styles of speech to account for the process of word-final /h/ deletion.

(23) WORD-FINAL /h/ DELETION (obligatory)

/h/ → [Ø] /____#

The motivation for having a rule such as (23) in the phonological component of MCS to account for a single lexical item may at first seem rather ad hoc, rather than treating reloj as a relexicalization, i.e. from /r̃eloje/ to /r̃elo/ in its underlying form. There are, however, several other reasons why such a rule as (23) is motivated: (1) pluralization--the plural of [r̃elóˀ] is [r̃elóheh]; with the underlying representation /r̃elohe/, pluralization may be regularly accounted for, by adding /s/ to the singular; with the underlying representation /r̃elo/, some ad hoc statement is needed to account for the process of pluralization; (2) stress assignment--with /r̃elohe/ as the systematic phonemic

representation, penultimate stress may be regularly assigned; with /relo/ as the underlying representation, stress must be accounted for by some arbitrary, ad hoc manner; (3) predictive power of the rule--rule (23) predicts that if an additional lexical item ending in /h/ (grapheme j) were added to the daily lexicon of MCS, from another dialect of Spanish, for example, e.g., pedicoj 'hopping,' this lexical item would appear phonetically as [peðiho].

3.6.2 /d/ in Word-final Environments

The occurrences of systematic /d/ were tabulated in absolute-final position and word-final position within a breath-group.

Table XXVII presents the surface manifestations of systematic /d/ in the above mentioned environments, along with their percentages of occurrences.

TABLE XXVII

SURFACE MANIFESTATIONS OF SYSTEMATIC /d/ IN WORD-FINAL AND ABSOLUTE-FINAL ENVIRONMENTS

| Environment | Total Number of Occurrences of /d/ in Env. in Question | [ð] No. | [ð] % | [Ø] No. | [Ø] % |
|---|---|---|---|---|---|
| Absolute-final | 65 | 0 | 0 | 65 | 100.0 |
| Word-final | 61 | 0 | 0 | 61 | 100.0 |

Table XXVII shows that, in MCS rapid speech (based on the data under analysis in this study) the only possible surface manifestation of systematic /d/ in all word-final environments is [Ø]. There was not a single occurrence of [ð] in this environment.

The data in Table XXVII suggest the need for a rule such as shown below in (24) in the phonological component of MCS rapid speech.

(24) WORD-FINAL /d/ DELETION (obligatory)

/d/ → [ø] /____#

Rule (24) is obligatory in rapid speech, occurring at a frequency rate of 100.0%.

As suggested by Bohdan Saciuk (personal communication), rules (23) and (24) written as separate rules miss the generalization that no non-/s/ obstruent is allowed in the rapid speech of MCS. Such a general rule could be written as shown below in (25):

(25) WORD-FINAL NON-STRIDENT OBSTRUENT DELETION

$$\begin{bmatrix}-\text{sonorant}\\-\text{strident}\end{bmatrix} \rightarrow [ø] \;/____\#$$ (obligatory)

Rule (25) would also apply to lexical items such as club 'Id.' [klú], stop 'stop sign' [ehtó], etc.

One difficulty with a rule such as (25), however, is that without resorting to extrinsic rule ordering or placing a global constraint on this rule, it will also apply to every occurrence of the [h] surface variant of systematic /s/ (since rule (25) is obligatory). Unfortunately, the [h] surface variant of /s/ is not deleted 43.0% of the time in word-final environments. This problem, nevertheless, does not negate the fact that a rule such as (25) is intuitively and descriptively correct.

## 3.7 Phonetic Realizations of Systematic /č/

All occurrences of systematic /č/ in the phonetic transcription of the taped material under analysis in this study were found in syllable-initial environments, the only possible environment for this phoneme in Spanish. Systematic /č/ was found to have sometimes the surface variant [š] in MCS rapid speech. The percentages of occurrence of the surface

forms [č] and [š] of systematic /č/, relative to the following vowel, are shown in Table XXVIII.

TABLE XXVIII

FREQUENCY OF OCCURRENCE OF THE SURFACE VARIANTS OF SYSTEMATIC /č/ (274 OCCURRENCES)

| Following Vowel | [č] | | [š] | | Percentage of Occurrence before Vowel in Question | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | [č] | [š] |
| [a] | 77 | 28.1 | 24 | 8.8 | 76.2 | 23.8 |
| [e] | 16 | 5.8 | 13 | 4.7 | 55.1 | 44.9 |
| [i] | 48 | 17.5 | 19 | 6.9 | 71.6 | 28.4 |
| [o] | 55 | 20.0 | 17 | 6.2 | 76.4 | 23.6 |
| [u] | 4 | 1.5 | 1 | 0.4 | 80.0 | 20.0 |
| Totals | 200 | 72.9 | 74 | 27.1 | | |

The data in Table XXVIII show that /č/ surfaces most frequently in its underlying form, i.e. without undergoing the application of any phonological rules. The surface form [č] accounts for 72.9% of all phonetic occurrences of systematic /č/. The other surface variant of /č/, occurring at a percentage rate of 27.1 is the palatoalveolar voiceless fricative [š].

Disregarding the vowel [u], for which there were only five total occurrences, the surface form [č] occurred most frequently before the vowels [o] (76.4%) and [a] (76.2%), and least frequently before [e] (55.1%). Again disregarding [u], the form [s] occurred most frequently before the vowel [e], and least frequently before [o].

These data may tend to suggest that [š], when it occurs, does so before front vowels. This type of statement, however, can only be very

tentative, because of a need for more data, and, although such a trend is in evidence before [e] (which again may only be a fortuitous coincidence), it is highly inconclusive before the high front vowel [i].

The data in Table XXVIII suggest the need for the following rule in MCS rapid speech:

(26) FRICATIVIZATION OF SYSTEMATIC /č/ (optional)

/č/ → [š] /$____

Rule (26) would be optional, with a rate of occurrence of 27.1%.

Table XXIX compares the occurrences of the surface variants of underlying /č/, based on the sex of the speaker.

TABLE XXIX

OCCURRENCES OF [č] AND [š]
BASED ON SPEAKER'S SEX

| Phonetic Variant | Total Number of Occurrences | Use by Male Speakers | | Use by Female Speakers | |
|---|---|---|---|---|---|
| | | No. | % | No. | % |
| [č] | 200 | 101 | 50.5 | 99 | 49.5 |
| [š] | 74 | 38 | 51.3 | 36 | 48.7 |

The data contained in Table XXIX show that male speakers accounted for 50.5% of the total number of occurrences of the surface form [č]. More interestingly, however, is the fact that these data reflect the fact that male speakers also accounted for 51.3% of the occurrences of the [š] variant of systematic /č/.

This fact is contrary to what was reported in Lamb (1968, p. 79), which reported that the [š] allophone "occurred predominately with woman informants." The data contained in Table XXIX also agree with my own

personal observations relative to the occurrence of [š] in MCS, i.e. that the fricative variant occurs as frequently in the speech of both sexes.

3.8 Devoicing of Word-final Vocalic Segments

The devoicing of word-final vowels, particularly after systematic /č/, has been reported in a number of phonological studies done on Cuban Spanish, e.g., Almendros (1958), Isbăşescu (1968a), Bertot (1969). Table XXX shows the percentage of occurrences of devoicing of word-final vowels after the two surface variants [č] and [š] of the systematic phoneme /č/.

TABLE XXX

PERCENTAGES OF OCCURRENCE OF VOICELESS VOWELS AFTER PHONETIC VARIANTS OF /č/ (274 OCCURRENCES)

| Vowel | [č] Preceding Vowel in Question No. | % | [š] Preceding Vowel in Question No. | % |
|---|---|---|---|---|
| [a] | 3 | 1.1 | 4 | 1.5 |
| [e] | 3 | 1.1 | 3 | 1.1 |
| [i] | 1 | 0.4 | 0 | 0 |
| [o] | 36 | 13.1 | 4 | 1.5 |
| [u] | 0 | 0 | 0 | 0 |
| Totals | 43 | 15.7 | 11 | 4.1 |

Table XXX shows that devoicing of word-final vowels after /č/ occurs in MCS at a total percentage rate of 19.8, occurring at rates of 15.7% and 4.1% after the surface variants [č] and [š], respectively. These data suggest the need for a phonological rule of vowel devoicing after /č/, such as shown in (27).

(27) VOWEL DEVOICING AFTER /v̌c/ (optional)

$$[V] \rightarrow [\text{-voice}] \; / \; \begin{Bmatrix} \overset{v}{c} & (15.7\%) \\ \overset{v}{s} & (4.1\%) \end{Bmatrix} \; \underline{\quad}\# $$

Rule (27) would be an optional rapid speech rule in MCS, occurring at the percentage rates shown with the rule.

Although these data show that vowel devoicing occurs more frequently after [v̌c] than after [v̌s], this is probably only a fortuitous coincidence, since it would appear that no phonological conditioning could be involved here.

There were also sporadic occurrences of vowel devoicing in environments other than after /v̌c/ found in the data used in this study. Examples of these sporadic occurrences are shown below in (28).

(28)

| | Lexical item | Phonetic form |
|---|---|---|
| a. | vaca 'cow' | [bákạ] |
| b. | pata 'paw' | [pátạ] |
| c. | mariposa 'butterfly' | [maripósạ] |
| d. | palo 'stick' | [pálọ] |

The only totally anomalous item in (28) is example (d), which occurred only once in the taped material; in this one occurrence, the vowel after [l] is clearly devoiced. Since vowel devoicing occurred only once after a voiced segment, this occurrence is probably best regarded as a tongue slip or performance failure, and most likely, not a phonological process of MCS.

3.9 Monophthongization

At times in MCS rapid speech, monophthongs may be observed where diphthongs normally occur in the standard language. The only three

different instances of monophthongization taken from the taped material used in this study are shown below:

(29)

| Lexical item | Phonetic representation |
|---|---|
| a. pues 'then' | [póh] ~ [pós] |
| b. puedo 'I can' | [póo̯o] |
| c. siéntate 'sit down' | [séɲtate] |

Item (29a) was recorded nine times as shown; item (29b) eleven times; item (29c) three times. This process of monophthongization, or better expressed as the failure of the process of diphthongization, occurred, then, a total of twenty-three times, by three different speakers--all female, with two of these three originally from the province of La Habana, the other from Oriente. This is not to suggest, however, because of the extremely small number of occurrences, that this phenomenon is limited to females, and/or to habaneros and orientales, although such sweeping claims have been made in the past concerning Cuban Spanish, based on a far smaller body of data than is under analysis here, e.g., Isbaşescu (1968a).

It should also be mentioned that all three of the lexical items shown in (29) also occurred with diphthongs in the conversations under analysis in the present study.

Based on the data in this section, no new rule of monophthongization would be required for MCS rapid speech--presumably, until such a time that this phenomenon became common, only the three lexical items, shown in (29), would be marked as optionally undergoing the diphthongization process of standard Spanish, since the monophthong would be contained in the systematic phonemic representation of each of the items in (30), as shown below:

| (30) | Lexical item | Underlying form |
|---|---|---|
| a. | pues | /pos/[17] |
| b. | puedo | /podo/ |
| c. | siéntate | /sentate/ |

3.10 Surface Manifestations of Liquids

The liquids of Spanish in general, and of MCS in particular, are usually described as being rather unstable. This instability is probably more a consequence of the fact that /r/ and /l/ are two of a very limited set of possible syllable-final consonants in Spanish, and syllable-final, rather than syllable-initial, tends to be an environment of instability or neutralization in many Spanish dialects.

This relative instability of /r/ and /l/ is also probably related to the fact that there is a language universal which tends to allow only one alveolar liquid, e.g., Chinese, Korean. In a language such as Spanish, where there are three alveolar liquids, it seems quite natural that there would be a tendency to level these two systematic phonemes into one.

A discussion of the surface forms for the three systematic liquids, /r̃/, /r/, and /l/, of MCS will be presented in the following subdivisions of this section.

3.10.1 Phonetic Realizations of Systematic /l/

Throughout the literature on Cuban Spanish phonology, reference is repeatedly made to a phenomenon known as "r-l confusion" or "r-l neutralization," occurring in syllable-final and/or word-final environments.

Table XXXI lists the different surface manifestations of systematic /l/, in phrase-final position, word-final position within a breath-group,

TABLE XXXI

SURFACE MANIFESTATIONS OF SYSTEMATIC /l/
IN ALL ENVIRONMENTS (3329 OCCURRENCES)

| Surface Manifestation and Environment | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [l] (all environments) | 3194 | 95.91 |
| [ø] /____## | 4 | 0.13 |
| [ø] /____#C | 65 | 1.96 |
| [ɾ] /____#C | 20 | 0.60 |
| [l̥] /____#C | 15 | 0.45 |
| [h] /____#C | 4 | 0.13 |
| [ɾ] /____#V | 3 | 0.09 |
| [ø] /____$C | 9 | 0.27 |
| [ɾ] /____$C | 8 | 0.24 |
| [l̥] /____$C | 4 | 0.13 |
| [h] /____$C | 3 | 0.09 |
| Totals | 3329 | 100.00 |

and syllable-final position within a word. The data in this table show the systematic phoneme /l/ to be extremely stable in MCS, surfacing as its underlying form at a significantly high rate of 95.91%.

The "r-l confusion," so frequently associated with Cuban Spanish (e.g., Isbaşescu, 1968a)is simply not evident in these data from MCS. One thing is clear--systematic /l/ is seldom "confused" or neutralized with systematic /r/ at the surface level (only an occurrence rate of

0.93% considering all environments). Table XXXI suggests the need for an optional rule of /l/ liquid neutralization, as shown below, occurring only at a rate of 0.93%.

(31) LIQUID NEUTRALIZATION OF SYSTEMATIC /l/ (optional)

$$/l/ \rightarrow [\text{ɪ}] / ____ \begin{cases} \#C & (0.60\%) \\ \$C & (0.24\%) \\ \#V & (0.09\%) \end{cases}$$

Also shown in Table XXXI is that systematic /l/ is deleted at a rate of 2.36%, suggesting the need for the following optional rule of NCS rapid speech:

(32) SYSTEMATIC /l/ DELETION (optional)

$$/l/ \rightarrow [\emptyset] / ____ \begin{cases} \#C & (1.96\%) \\ \$C & (0.27\%) \\ \#\# & (0.13\%) \end{cases}$$

Table XXXI also shows that systematic /l/ is devoiced at a rate of 0.58%, which suggests the inclusion of a rule of systematic /l/ devoicing in syllable-final and word-final environments before a following consonant, as shown below:

(33) SYSTEMATIC /l/ DEVOICING (optional)

$$/l/ \rightarrow [l] / ____ \begin{cases} \#C & (0.45\%) \\ \$C & (0.13\%) \end{cases}$$

Table XXXI suggests further the need for one more rapid speech rule, to account for the [h] surface manifestations of systematic /l/, which would occur at a rate of 0.39%. This optional rule of /l/ aspiration is shown below in (34).

(34) SYSTEMATIC /l/ ASPIRATION (optional)

$$/l/ \rightarrow [h] / ___ \begin{cases} \#C & (0.13\%) \\ \$C & (0.09\%) \end{cases}$$

The convergence of the data given in Table XXXI clearly shows /l/ to be a highly stable consonant in all phonological environments, and suggests the need for four very infrequent rules (shown in (31) through (34)) for MCS rapid speech.

3.10.2 Phonetic Realizations of Systematic /r̃/

The percentages of occurrence of the different surface manifestations of systematic /r̃/ are presented in Table XXXII.

TABLE XXXII

SURFACE MANIFESTATIONS OF SYSTEMATIC /r̃/
IN WORD-INITIAL ENVIRONMENTS

| Surface Manifestation | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [r̃] | 81 | 31.5 |
| [r̃$^{h}$] | 36 | 14.0 |
| [r̃$_{o}$] | 3 | 1.2 |
| [r] | 13 | 5.0 |
| [r$^{h}$] | 91 | 35.5 |
| [r$_{o}^{h}$] | 2 | 0.8 |
| [r̆] | 31 | 12.0 |
| Totals | 257 | 100.0 |

The data given in Table XXXII show that, unlike standard Spanish, the most frequent surface manifestation of systematic /r̃/ in MCS rapid

speech is [$r^h$], an aspirated flap liquid, occurring at a rate of 35.5%. The second most frequent surface variant of /$\tilde{r}$/ in this environment is that of the standard language, [$\tilde{r}$], occurring at a rate of 31.5%. The next most frequent surface variants of /$\tilde{r}$/ in word-initial position are [$\tilde{r}^h$], an aspirated trill, occurring at a rate of 14.0%, and [$\check{r}$], an assibilated retroflex liquid, occurring at a rate of 12.0%. The other three surface variants of /$\tilde{r}$/ account for only 7.0% of the total surface forms in this environment, and appear in the following frequencies: [r], 5.0%; [$\tilde{r}_o$], 1.2% (a voiceless trill liquid); [$r_o^h$], 0.8% (a voiceless aspirated flap). The above data from Table XXXII suggest the need for the inclusion of the following optional rule, which will account for 68.5% of the surface manifestations of systematic /$\tilde{r}$/:

(35) WORD-INITIAL /$\tilde{r}$/ SURFACE VARIANTS (optional)

$$/\tilde{r}/ \rightarrow \left\{ \begin{array}{ll} [r^h] & (35.5\%) \\ [\tilde{r}^h] & (14.0\%) \\ [\check{r}] & (12.0\%) \\ & \\ [r] & (5.0\%) \\ [\tilde{r}_o] & (1.2\%) \\ [r_o^h] & (0.8\%) \end{array} \right\} \quad /\#____$$

The percentages of occurrence of the different surface variants of systematic /$\tilde{r}$/ in intervocalic position are shown in Table XXXIII. The data in this table reflect the fact that in intervocalic position, the most frequent surface manifestation of systematic /$\tilde{r}$/ is [$\tilde{r}$], occurring at a rate of 36.4%. The second most frequent phonetic variant of /$\tilde{r}$/ is [$r^h$], which occurs at a rate of 32.3%. The third most frequent form in intervocalic environments is [$\tilde{r}^h$], with an occurrence rate of 23.3%. The remaining 8.0% of the total surface manifestations of systematic /$\tilde{r}$/ are accounted for by the forms [$\tilde{r}_o$] (7.2%) and [$\check{r}$] (0.8%).

TABLE XXXIII

SURFACE MANIFESTATIONS OF SYSTEMATIC /r̃/
IN INTERVOCALIC ENVIRONMENTS

| Surface Variant | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [r̃] | 45 | 36.4 |
| [r̃ʰ] | 29 | 23.3 |
| [r̥̃] | 9 | 7.2 |
| [rʰ] | 40 | 32.3 |
| [r̆] | 1 | 0.8 |
| Totals | 124 | 100.0 |

Based on the data in Table XXXIII, the following optional rapid speech rule is suggested for MCS:

(36) INTERVOCALIC /r̃/ SURFACE MANIFESTATIONS (optional)

/r̃/ → { [rʰ] (32.3%), [r̃ʰ] (23.3%), [r̥̃] (7.2%), [r̆] (0.8%) } / V ____ V

Besides the occurrences of systematic /r̃/ shown in Tables XXXII and XXXIII, there was one more environment in which systematic /r̃/ appeared in the tapes used in this study: There were three occurrences of systematic /r̃/ in syllable-initial position within a word after [n]--all the occurrences of /r̃/ in this environment were as the surface form [r̃]. Although systematic /r̃/ also occurs in syllable-initial position within a word after [s] and after [l], there were no occurrences of either in the taped conversations used in this study.

3.10.3 Phonetic Realizations of Systematic /r/

The different surface manifestations of the systematic phoneme /r/ were tabulated, relative to the following environments: (1) phrase-final; (2) word-final within a breath-group before a following consonant; (3) word-final within a breath-group before a following vowel; (4) syllable-final within a word before a following consonant; (5) syllable-initial; (6) in obstruent plus /r/ clusters.

Table XXXIV shows the percentages of occurrence of the surface variants of systematic /r/ in phrase-final environments.

TABLE XXXIV

PERCENTAGES OF OCCURRENCE OF SURFACE VARIANTS OF /r/ IN PHRASE-FINAL ENVIRONMENTS

| Surface Variant | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [r] | 126 | 53.6 |
| [ɾ] | 49 | 20.9 |
| [f] | 44 | 18.7 |
| [ø] | 13 | 5.5 |
| [r̥] | 3 | 1.3 |
| Totals | 235 | 100.0 |

The data in Table XXXIV show that the most frequently occurring surface variant of systematic /r/ in phrase-final environments is [r], occurring at a rate of 53.6%. The second most frequent surface variant, however, is [ɾ], a lateralized flap liquid, occurring at a rate of 20.9%. The surface variant [ɾ] is what has been frequently described as the result of liquid neutralization, i.e. the

neutralization of /r/ and /l/ to [ɹ̩]. This type of neutralization is what has been frequently called "r-l confusion," and is usually described as occurring in syllable-final environments. From the data presented here in Table XXXIV, and from those data previously presented in Table XXXI (relative to the surface variants of systematic /l/), it is evident, based on the data under analysis in this study, that there is really no such phenomenon as "r-l confusion"--/l/ is neutralized to [ɹ̩], in a negligible number of cases (0.9%), while /r/ is much more frequently neutralized in this manner in phrase-final environments (20.9%). What is present in MCS is not "r-l confusion" in this environment, but rather, an "r" confusion with "l," i.e. it is a unilateral, and not a bilateral process. The third most frequent surface variant of /r/ in phrase-final environments is [ɾ], a retroflex non-lateral flap, occurring at a percentage rate of 18.7. These three surface variants of systematic /r/ account for 93.2% of all surface manifestations of /r/ in the stated environment; the remaining 6.8% of the total surface occurrences of /r/ consist of [ø] (5.5%) and [r̥] (a voiceless flap liquid)(1.3%).

These data in Table XXXIV suggest the need for a rule such as the following to account for the different changes systematic /r/ must undergo from underlying to surface levels in phrase-final environments in MCS rapid speech:

(37) SURFACE MANIFESTATIONS OF /r/ IN PHRASE-FINAL ENVIRONMENTS (optional)

$$/r/ \rightarrow \begin{cases} ɹ̩ & (20.9\%) \\ ɾ & (18.7\%) \\ & \\ ø & (5.5\%) \\ r̥ & (1.3\%) \end{cases} \quad /___\#\#$$

The percentages of occurrence of the different surface variants of systematic /r/ in word-final environments before a following consonant are shown in Table XXXV.

TABLE XXXV

PERCENTAGES OF OCCURRENCE OF SURFACE VARIANTS OF /r/ IN WORD-FINAL ENVIRONMENTS BEFORE A CONSONANT

| Surface Variant | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [r] | 117 | 36.1 |
| [ɾ] | 107 | 32.9 |
| [ɽ] | 56 | 17.2 |
| [ɪ] | 28 | 8.6 |
| [ø] | 17 | 5.2 |
| Totals | 325 | 100.0 |

As seen in Table XXXV, the most frequent surface variant of systematic /r/ in word-final position when a consonant follows the word-boundary is [r], occurring at a rate of 36.1%. The next most frequently occurring surface variant in this environment is [ɾ] (32.9%), while the third most frequent surface variant is [ɽ] (a palatoalveolar retroflex flap),[18] occurring at a rate of 17.2%. These three surface variants account for 86.2% of the total occurrences of systematic /r/ in the stated environment. The remaining 13.8% of the total surface occurrences consist of [ɪ] (8.6%) and [ø] (5.2%).

A phonological rule in NCS rapid speech, such as shown below in (38) is suggested by the data presented in Table XXXV.

(38) /r/ SURFACE VARIANTS IN THE ENVIRONMENT /____#C

$$/r/ \rightarrow \begin{Bmatrix} \acute{r} & (32.9\%) \\ \dot{\acute{r}} & (17.2\%) \\ ɾ & (8.6\%) \\ \emptyset & (5.2\%) \end{Bmatrix} \quad /____\#C$$

This rule will account for 63.9% of the total phonetic occurrences of systematic /r/ in the stated environment.

Table XXXVI lists the different surface variants of systematic /r/ in word-final environments when a [+syllabic] segment follows the word-boundary.

It can be seen from the data in Table XXXVI that the surface variants [r] and [ŕ] are also the two most frequent forms of systematic /r/ in the environment of a following word-boundary followed by a vowel, as was also the case when a consonant followed the word-boundary. [r] occurs at a frequency rate of 42.8%, while [ŕ] occurs at a rate of 38.2%. These two surface variants, [r] and [ŕ] account for 81.0% of the total occurrences of systematic /r/ in this environment. The remaining 19.0% of the phonetic occurrences consist of [ɾ], 8.0%; [∅], 8.5%; and [h], 2.5%.

A phonological rule such as the following is suggested by the data contained in Table XXXVI:

(39) /r/ SURFACE VARIANTS IN THE ENVIRONMENT /____#V

$$/r/ \rightarrow \begin{Bmatrix} \acute{r} & (38.2\%) \\ \emptyset & (8.5\%) \\ ɾ & (8.0\%) \\ h & (2.5\%) \end{Bmatrix} \quad /____\#V$$

TABLE XXXVI

PERCENTAGES OF OCCURRENCE OF SURFACE VARIANTS OF /r/ IN WORD-FINAL ENVIRONMENTS BEFORE A VOWEL

| Surface Variant | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [r] | 85 | 42.8 |
| [ɾ̥] | 76 | 38.2 |
| [ɪ] | 16 | 8.0 |
| [ø] | 17 | 8.5 |
| [h] | 5 | 2.5 |
| Totals | 199 | 100.0 |

A rule such as shown above in (39) will account for 57.2% of the total number of surface manifestations of systematic /r/ in the stated environment.

Table XXXVII combines the data shown in Tables XXXV and XXXVI, taking into consideration both [+syllabic] and [-syllabic] segments immediately following the word-boundary.

By comparing the data in Table XXXVII with those in Tables XXXV and XXXVI, one important difference is noted: The surface manifestation [ɾ̥] occurs only when a consonant immediately follows the word-boundary. Aside from this important difference, the surface manifestations [r], [ɾ̥], [ɪ], [ø], and [h] of systematic /r/ occur from most to least frequently in the same relative order, i.e., the [± syllabic] status of the segment immediately following the word-boundary has a conditioning effect on the presence or absence of the surface variant [ɾ̥]; in all other cases, however, the segment following the word-boundary appears to be irrelevant.[19]

TABLE XXXVII

PERCENTAGES OF OCCURRENCE OF SURFACE VARIANTS OF /r/ IN WORD-FINAL ENVIRONMENTS BEFORE BOTH [± syllabic] SEGMENTS

| Surface Variant | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [r] | 202 | 38.5 |
| [ɾ́] | 183 | 34.9 |
| [ɾ̣́] | 56 | 10.7 |
| [ɹ̩] | 44 | 8.4 |
| [ø] | 34 | 6.5 |
| [h] | 5 | 1.0 |
| Totals | 524 | 100.0 |

Table XXXVIII shows the percentages of occurrence of the different surface manifestations of systematic /r/ in syllable-final position within a word.[20]

Table XXXVIII shows that the most frequent surface manifestations of systematic /r/ in syllable-final position within a word is the palatoalveolar retroflex flap [ɾ̣́], occurring at a rate of 32.7%. This fact correlates nicely with the findings taken from the data in Table XXXVII which show that the occurrence of [ɾ̣́] is conditioned by the presence of a consonant immediately following the boundary marker. The second most frequent surface variant of /r/ in the environment in question is [r] (28.7%); the third most frequent being [ɾ̣́] (27.5%).

The surface variants [ɾ̣́], [r], and [ɾ́] of systematic /r/ account for 88.9% of the total occurrences; the remaining 11.1% of the total surface occurrences are accounted for by [ɹ̩](7.0%); [h] (3.3%); [ø] (0.6%); and [ɾ̆] (0.2%).

TABLE XXXVIII

PERCENTAGES OF OCCURRENCE OF SURFACE VARIANTS OF /r/ IN SYLLABLE-FINAL POSITION WITHIN A WORD

| Surface Variant | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [ɾ̣] | 284 | 32.7 |
| [r] | 249 | 28.7 |
| [ɾ́] | 239 | 27.5 |
| [ɨ] | 61 | 7.0 |
| [h] | 29 | 3.3 |
| [ø] | 5 | 0.6 |
| [r̆] | 2 | 0.2 |
| Totals | 869 | 100.0 |

It can also be noted from the data in Table XXXVIII that, although /r/ has an abundance of different surface manifestations in syllable-final position within a word, the tendency toward "r-l confusion" is very weak, with liquid neutralization, i.e., /r/ → [ɨ], occurring at a low percentage rate of 7.0%. It also seems abundantly clear from the data presented in this section that "r-l confusion" does not occur, at any significant percentage rate, in any phonological environment in MCS.

The data in Table XXXVIII suggest the need for the inclusion of an optional rapid speech rule for the phonological component of MCS, as shown below:

(40) PHONETIC FORMS OF /r/ IN THE ENVIRONMENT /_____$C (optional)

/r/ → { [ɾ̥] (32.7%); [r] (28.7%); [ɾ] (27.5%); [ɻ] (7.0%); [h] (3.3%); [ø] (0.6%); [r̆] (0.2%) } /_____$C

From the percentages given in rule (40), the very important fact can be seen that [ɾ̥] and [ɾ] (i.e. the retroflex realizations of systematic /r/) make up 60.2% of the total phonetic occurrences of /r/ in the stated environment.

The percentages of occurrence of the different surface manifestations of systematic /r/ when it is preceded by a [-sonorant] segment, i.e., syllable-initial obstruent plus /r/ clusters, are shown in Table XXXIX.

The data presented in Table XXXIX show that the most frequent surface variant of /r/ in the stated environment is [r], occurring at a rate of 81.9%. The only other surface variant that occurs in any significant percentage is [ɾ] (15.1%). The remaining 3.0% of the total occurrences of /r/ in this environment are accounted for by the surface variants [ɻ] (1.2%); [r̆] (1.1%); and [rʰ] (0.7%).

The data in Table XXXIX suggest the need for the following rule in the rapid speech phonological component of MCS, shown below as (41):

TABLE XXXIX

PERCENTAGES OF OCCURRENCE OF SURFACE VARIANTS OF SYSTEMATIC /r/ IN OBSTRUENT PLUS /r/ CLUSTERS

| Surface Variant | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [r] | 605 | 81.9 |
| [ɾ́] | 112 | 15.1 |
| [r̥] | 9 | 1.2 |
| [r̬] | 8 | 1.1 |
| [$r^h$] | 5 | 0.7 |
| Totals | 739 | 100.0 |

(41) PHONETIC FORMS OF /r/ IN THE ENVIRONMENT /$C____

(optional)

/r/ { ɾ́ (15.2%); r̥ (1.2%); r̬ (1.1%); $r^h$ (0.7%) } /$C____

A rule such as (41) would account for 18.2% of the total surface occurrences of systematic /r/ in this environment.

Shown in Table XL are the percentages of occurrence of the different surface manifestations of systematic /r/ in syllable-initial environments (excluding word-initial).

The data from Table XL show that [r] is by far the most frequent surface variant of systematic /r/ in syllable-initial position, occurring at a rate of 77.9%. The only other surface variant which occurs at any significant rate in this environment is [ɾ́] (16.3%). The

TABLE XL

PERCENTAGES OF OCCURRENCE OF SURFACE VARIANTS OF SYSTEMATIC /r/ IN SYLLABLE-INITIAL ENVIRONMENTS

| Surface Variant | Number of Occurrences | Percentage of Occurrences |
|---|---|---|
| [r] | 981 | 77.9 |
| [ɾ] | 207 | 16.3 |
| [ø] | 60 | 4.8 |
| [r̥] | 12 | 1.0 |
| Totals | 1260 | 100.0 |

remaining 5.8% of the total occurrences of systematic /r/ in syllable-initial environments are accounted for by [ø] (4.8%) and [r̥] (1.0%). Of the latter two surface variants, [ø] must be disregarded, because all sixty occurrences of this [ø] surface variant of /r/ occurred in the lexical item para, which in MCS rapid speech, as well as in many other Spanish dialects, is pronounced [pá]. This phenomenon, however, is probably better regarded as an idiosyncratic anomaly of the single lexical item para, rather than trying to state that /r/ → [ø] /$____ is a phonological process of MCS rapid speech.

In light of the data given in Table XL, the following phonological rule of MCS rapid speech is suggested, as shown below as (42):

(42) SYLLABLE-INITIAL (WORD-MEDIAL) SURFACE VARIANTS OF /r/ (optional)

$$/r/ \rightarrow \begin{Bmatrix} \acute{r} & (16.3\%) \\ \mathring{r} & (1.0\%) \end{Bmatrix} \; / [+\text{segment}] \; \$____$$

A rule such as (42) above will account for 17.3% of the total number of surface occurrences of systematic /r/ in syllable-initial environments within a word.

## 3.11 Some Miscellaneous Phonological Processes of MCS Rapid Speech

In this section, several miscellaneous observations are discussed, relative to phonological processes in MCS rapid speech. All of the items mentioned herein were not processes which were tabulated in the original transcription process, but merely processes noted while the actual analysis of the taped material was being effected. Because these processes were not part of the original plan, they will not be reported in terms of percentages of occurrences, but rather, in the traditional manner of "sometimes," "frequently," etc. Also, all the phonological processes mentioned herein have been discussed in other previous studies done on Cuban Spanish.

### 3.11.1 Voicing Assimilation

In section 3.5 of the present study, the surface variants [s h Ø] of systematic /s/ were presented in terms of the percentages of their frequencies of occurrence. A fourth surface variant of systematic /s/, the voiced glottal fricative [ɦ] was also observed at times in the taped material under analysis. [ɦ] occurs in MCS rapid speech as an alternate of /s/ when [h] is followed by a voiced consonant, e.g. mismo [míɦmo]. This optional rapid speech process can be expressed as shown below in (43):

(43) GLOTTAL SPIRANT VOICING ASSIMILATION (optional)

$$[h] \rightarrow [+\text{voice}] \,/\, \underline{\quad}(\#) \begin{bmatrix} -\text{syllabic} \\ +\text{voice} \end{bmatrix}$$

There were, however, no cases in the recorded material under analysis in this study of voicing assimilation of [s] to a following voiced consonant, e.g., mismo [mízmo], which occurs in a number of Spanish dialects. It is possible, however, that in cases of /s/ retention before voiced consonants, that this /s/ could, even in MCS, become voiced, i.e., appear phonetically as [z].

3.11.2 The Dorsovelar Spirant

Bartoš (1970:154) reported that names of Germanic origin are sometimes heard with the voiceless dorsovelar fricative [X], rather than with the voiceless glottal fricative [h] as usually found in Cuban Spanish. In this study there were seven occurrences of the lexical item jipi, cf. English 'hippie,' and four occurrences of the city name 'Hialeah.' Although jipi is not a proper name, and Hialeah is not of Germanic origin, one might, however, expect to hear [X] at times in lexical items such as these. In all eleven occurrences of these two lexical items, however, the initial segment was pronounced as a voiceless glottal fricative, cf.:

(44) a. jipi [hípi]

b. Hialeah [hayalía]

This is not to suggest that what Bartoš (1970) reported does not happen in MCS, but rather that it did not occur in the recorded conversations under analysis in this study.[21]

3.11.3 The Voiceless Bilabial Spirant

Occurring occasionally in the taped conversations used in this study was the voiceless bilabial spirant [ɸ] as a surface variant of systematic /f/. Examples taken from this recorded material are shown in (45):

(45) a. gofio 'corn chaff' [gó*f*yo]

b. profesor 'teacher' [pro*f*esór]

The occurrence of the surface variant [*f*] of systematic /f/ suggests the need for the following optional rule in MCS rapid speech:

(46) SYSTEMATIC /f/ FRONTING (optional)

/f/ → [-strident] /$____

The occurrence of the [*f*] allophone of systematic /f/ has been previously reported for Cuban Spanish, cf. Bertot (1969), and also for many other Spanish dialects, e.g., Colombia (Flórez, 1951); Mexico (Boyd-Bowman, 1960); Chile (Oroz, 1964); Puerto Rico (Jesús Mateo, 1967) and (Pérez Sala, 1971), etc.

3.11.4 Intervocalic /d/ Deletion

An extremely common phonological process that occurred very frequently in the recorded material under analysis in this study was the deletion of systematic /d/ between vowels, as shown below in (47):

(47) nadie 'nobody' [náye]

nada 'nothing' [ná]

pasado 'past' [pasáw]

An optional rapid speech rule, such as shown below in (48) would be required in MCS to account for this phenomenon:

(48) INTERVOCALIC /d/ DELETION (optional)

/d/ → [ø] /V____V

This process too has been often mentioned for both Cuban Spanish as well as for other Spanish dialects.

3.12 Conclusions

Throughout this section a variety of phonological processes taken from MCS rapid speech have been presented and formalized, and with most

were included the actual frequencies of occurrence in terms of percentages.

The percentages reported herein, however, can only be taken as tentative, based on five hours of recorded speech from twenty-one different informants. Only when a much larger corpus of data is available will such figures of percentage of occurrence become really meaningful. It has too often been the case, unfortunately, that sweeping generalizations and definitive statements have been made, relative to phonological processes in different Spanish dialects as well as in Cuban Spanish, based on such limited samples as four informants to represent a country the size of Cuba. These types of studies, unfortunately, somehow become often-cited and eventually accepted as truth. It is the belief here that such studies are more damaging than useful to our knowledge of dialectology as well as to our development of universal linguistic theory.

## NOTES

[1]These portions of the tape which are inaudible or incomprehensible, were so judged not only by me, but also by one or more native speakers of MCS.

[2]The expression ven acá in MCS usually means 'listen,' or 'just a minute,' most equivalent to oye of standard Spanish. Although it can literally mean 'come here,' as in the standard language, the previously mentioned meanings are more common, which explains its very high frequency of occurrence in MCS.

[3][ẽʔ] represents a nasalized mid-front vowel, followed by a glottal stop.

[4]There were 92 occurrences of /n/ followed by a word whose initial segment was velar, in which the velar nasal and standard nasal assimilation are the same phonetic manifestation. Therefore, these 92 occurrences are not included in the data in Table V.

[5]It should be recalled here that the expression ven acá, in which the velar nasal almost always occurs, and which is extremely frequent in MCS informal speech, will be affecting perhaps adversely these data, causing the percentage of occurrence of the velar nasal before a following [+syllabic] segment to be higher than what might be considered "normal" for MCS.

[6]The rule of nasal assimilation shown here in (5) is a revised version of Harris' (1969) rule of nasal assimilation, because Harris (1969), as stated, will not account for this process in MCS, because in MCS, nasal assimilation also takes place before [+nasal] segments, like in many other dialects of Spanish. Harris' (1969) rule of nasal assimilation is:

$$[+\text{nasal}] \rightarrow \begin{bmatrix} \alpha\,\text{cor} \\ \beta\,\text{ant} \\ \gamma\,\text{back} \\ \delta\,\text{distr} \end{bmatrix} \; /____(\#) \; \begin{bmatrix} +\text{obs} \\ \alpha\,\text{cor} \\ \beta\,\text{ant} \\ \gamma\,\text{back} \\ \delta\,\text{distr} \end{bmatrix}$$

The change [+obs] in the environment of Harris' version of this rule to [-syl] as shown in (5) will account for assimilation to a following nasal, and vacuously account for assimilation to a following liquid. Note also that Harris (1969) must extrinsically order a rule converting the glides [y] and [w] to the consonantal segments [y̆] and [ğ] before the application of the rule of nasal assimilation. The revision as proposed in (5) avoids this extrinsic ordering, because [-syl] will also account for glides.

The feature [high] must also be added, using the alpha convention, to both the environment and the structural change in the proposed revision to account for systematic /n/ assimilating to a following palatal nasal, e.g. un ñame 'a yam,' or to an alveopalatal nasal, e.g. un chico 'a boy,' cf.:

| | | |
|---|---|---|
| /un ñame/ | /un čiko/ | underlying form |
| [uñ ñame] | [uń čiko] | nasal assimilation |

[7]There were 168 occurrences of systematic /n/ followed by a velar segment. As was the case in Table V, these 168 occurrences are not included in the data in Table VIII.

[8]Once again, it should be recalled that the frequent lexical item entonces, in which the underlying nasal segments usually are deleted on the surface level, with prior nasalization of the preceding vowel, will possibly cause percentages that do not reflect the true actual rates of occurrence of [ŋ], [n], and [Ṽ].

[9]In his study of the phonology of MCS, Bohdan Saciuk, who was the first to observe this, reports the same phenomenon (personal communication), where, when the velar nasal occurs in syllable-final position within a word, it occurs almost exclusively before voiceless [t], and almost never before voiced [d].

[10]The use of /VN/ ⇒ [Ṽ(ʔ)] is only a shorthand device used in this section to represent the rule of vowel nasalization followed by deletion of this nasal consonant, merely as a means of avoiding needless repetition. Nothing theoretical is implied by this rule formalism.

[11]Bohdan Saciuk (personal communication) reports that frequently in Brazilian Portuguese the velar nasal is perceived following a nasalized vowel.

[12]The reader is reminded that the expression tú sabes, which is extremely common in MCS, will probably tend to skew the data concerning systematic /s/ in both absolute-final position and word-final position within a breath-group. This expression, which is almost always [tusáβe] in its surface form, will cause the percentages of occurrence of [Ø] from systematic /s/ to be higher than "normal."

[13]As was mentioned previously, small portions of the five hours of taped material under analysis here represented speech styles or speeds other than normal, rapid speech.

[14]The obstruents [β ð ɣ f s h č] are omitted from this table because they did not occur in this environment in the taped material.

[15]It should be mentioned here, because of whatever skewing effect it may have on the stated percentages in Table XXIV, that a significant percentage of the 682 occurrences of /s/ before a following [t] in this environment involved the lexical items este (and its variants estos, esta, and estas) and the different forms of the verb estar.

[16]See section 4.9.4 of the present study for a further discussion of syllable-initial s-aspiration.

[17]It is assumed here, perhaps incorrectly, that the systematic phonemic representation for pues is /pos/, because of its alternation with en pos. For those who will claim that this is too abstract a representation, then the underlying form would be /pues/. With the latter approach, which is no longer very elegant in light of the pues - pos alternation, a rule of monophthongization would have to be added to the rapid speech phonological component of MCS. The only other alternative would be some ad hoc device, such as marking pues in the lexicon as having an alternate form.

[18]This sound is very similar to the retroflex 'r' of American English, except that in [ṛ́] there is a very brief contact made by the tongue quickly striking the palatoalveolar region. The retroflex quality of [ṛ́] was pointed out to me by Bohdan Saciuk.

[19]The surface occurrences of [ṛ́] will be discussed later in this section in relation to segments following a syllable-boundary within a word.

[20]Because of the syllable structure of Spanish, the environment "syllable-final within a word" redundantly includes the fact that this syllable-boundary is followed by a consonant.

[21]Bohdan Saciuk (personal communication) reports to have heard the [x] in some English words (especially Hialeah) in his research on MCS.

## CHAPTER FOUR

## SOME THEORETICAL IMPLICATIONS FROM RAPID SPEECH PHENOMENA

### 4.1 Global Rules in a Generative Grammar

In many of the early phonological descriptions done within the framework of generative grammar, there was a heavy dependence on such devices as highly abstract underlying representations, rule ordering, global rules, etc.[1] Most phonologists, in more recent years, have recognized the dangers of the uncontrolled use of such devices, and there have been a significant number of articles published which have argued in favor of constraints on the use of these extremely powerful devices, or that have argued against the admissibility of such devices in the generative model.[2]

The use of "global-type" rules in phonological description is still a rather controversial topic. Kiparsky (1973) has suggested that the use of global rules be constrained to allow their application only to derived forms (i.e. not to underlying forms). Miller (1975), however, has shown evidence that in Greenlandic, there is a combined underlying/derived environment in which a global condition must be formulated so as to apply to underlying strings, showing that the above constraint suggested by Kiparsky (1973), while capturing the important natural (i.e. common) tendency for rules applying to derived strings to separate themselves off in terms of their behavior from identical underlying strings, is not without exception. Others would argue against the admissibility of global rules, in any form, within the framework of

generative theory. "Global-type" rules are very powerful devices, and their inclusion in phonological description must be somehow controlled or limited. There are, however, cases in which "global-type" rules appear to be the only, or at least the best means of describing some phonological processes in some natural languages. Evidence will be presented in sections 4.2, 4.3, and 4.4 of the present study, which shows that "global-type" rules are necessary to effectively describe three phonological processes which take place in MCS.

The references in the above paragraphs to "global-type" rules concern the notion of Globality in phonological rules. By Globality, I understand the general power or ability contained in any rule, which in its application makes reference to any other non-adjacent place in the grammar, be it to another rule, to another point in the derivation, to a point in some other derivation, to any item contained in the lexicon, or it may involve an overriding constraint on the application of rules. The notion of Globality, therefore, refers to global rules, in their purest sense, i.e. rules which "look back" or "look forward" vertically to any other step in the derivation; to rules requiring derivational constraints, i.e. rules which "look ahead," vertically, making reference to the surface structure constraints of a language; or to trans-derivational constraints, which have the power to horizontally scan other derivations of the grammar, e.g. the phonetic representation of lexical items, to obtain information relative to their application.[3] Sections 4.2, 4.3, and 4.4 of the present study all deal with phonological rules of MCS which employ the notion of Globality.

4.2 The Domain of "Final & Apocope"--a Derivational Constraint

It is a well-known fact of standard Spanish that there exists a

surface structure constraint which severely limits the inventory of word-final [-syllabic] segments. The following single consonants, preceded by a [+syllabic] segment, may occur in word-final position in standard Spanish" [s n ɲ r l x]. Examples of each are shown below:

(1) pan 'bread' [pán]
verdad 'truth' [berðáð]
mar 'sea' [már]
mal 'evil' [mál]
reloj 'clock' [reló x]
voz 'voice' [bós]

Foley (1965), Harris (1969), Saciuk (1969), and others have shown that, in order to account for various phonological rules of Spanish, e.g. stress prediction, pluralization of nouns and adjectives, velar softening, etc., all nouns and adjectives, in their underlying forms, must end in a [+syllabic] segment. Because of other independently motivated reasons, all nouns and adjectives whose surface forms do not otherwise end in an unstressed vowel, must have a word-final $[-_{\text{tense}}^{e}]$ in their underlying forms, cf.:

(2) pan 'bread' /panE/[4]
verdad 'truth' /berdadE/
mar 'sea' /marE/
mal 'evil' /malE/
rey 'king' /reyE/
reloj 'clock' /reloxE/
voz 'voice' /bosE/
maní 'peanut' /maniE/
fácil 'easy' /fasilE/
hablar 'to speak' /ablarE/[5]

The phonological grammar of Spanish must then contain a rule of final e apocope, ordered after velar softening and stress, to delete this word-final [-tense] of the systematic phonemic forms in specific environments. Harris (1969) formalizes this rule as follows (p. 181):

(3)

$$[-\text{tense}] \rightarrow [\emptyset] \,/\, V \begin{Bmatrix} \begin{bmatrix} +\text{cor} \\ +\text{ant} \\ +\text{voice} \end{bmatrix}_{o}{}^{1} \\ [y] \end{Bmatrix} \underline{\quad}\, \#$$

a.

b.

Aside from several exceptions, Harris' rule of "final e apocope" correctly predicts when this word-final e will be deleted, i.e. after [n ɫ r l],[6] and that it will not be deleted in other phonological environments, e.g.:

(4)

| | | |
|---|---|---|
| calle | 'street' | [káye] |
| torre | 'tower' | [tǒře] |
| mate | 'tea' | [máte] |
| arranque | 'starter' | [ařáŋke] |
| cofre | 'trunk' | [kǒfre] |
| puente | 'bridge' | [pwẽnte] |
| estudiante | 'student' | [estuɫyáŋte] |
| lumbre | 'light' | [lúmbre] |
| leche | 'milk' | [léče][7] |

While Harris' rule of "final e deletion" somewhat adequately describes the environments for this phonological process in the dialect of Mexican Spanish he is describing, as well as for standard Spanish, there are, however, many more problems involved in trying to account for this process[8] in MCS rapid speech.

The initial problem encountered in trying to account for this process of final e apocope in MCS rapid speech is that the inventory of

possible word-final [-syllabic] segments is different from that of standard Spanish. Compare the surface forms of the lexical items shown previously in (1) of this section with the phonetic forms of these items as they occur in rapid speech in MCS:

(5)

| lexical item | standard Spanish | |
|---|---|---|
| pan 'bread' | [pán] | [pán]~[pãn]~[pã] |
| verdad 'truth' | [berðáð] | [berðá] |
| mar 'sea' | [már] | [már]~[máɹ]~[má]~[már] |
| mal 'evil' | [mál] | [mál]~[máɹ]~[má$_{\circ}$l] |
| reloj 'clock' | [relóx] | [r̃elóh] |
| voz 'voice' | [bós] | [bóh]~[bó] |

In comparing the inventory of single consonants that may appear in word-final position in standard Spanish, i.e. [s n ð r l x], with those word-final consonants found in rapid speech in MCS, i.e. [n h l ɹ l$_{\circ}$ r r̃ r$_{\circ}$] the following differences are noted:

(6) a. /s/ in word-final position in unaffected rapid speech regularly appears as either [h] or [ø], and almost never as [s];

b. /n/ in word-final position in unaffected rapid speech regularly appears as [ŋ], and almost never as [n];

c. /d/ in word-final position regularly appears as [ø], and never as [ð];

d. systematic /l/ in word-final position in unaffected rapid speech almost always appears as [l] (95.9%), as in the standard language, but may also infrequently appear as [ɹ] or [l$_{\circ}$], as previously discussed in Chapter Three of this study.

e. systematic /r/, besides appearing as [r] as in the standard language, may also appear in word-final environments as [r̬], [ṙ̬] or [r̥], as previously discussed in Chapter Three of this study.

f. [x] which occurs in other dialects of Spanish does not exist in the phonetic inventory of MCS in any phonological environment. Systematic /x/ of standard Spanish occurs as [h] in syllable-initial position, e.g. gente 'people' [hẽŋte], and appears as [ø] in word-final position in MCS.

A comparison of the possible word-final consonants of standard Spanish with those of MCS rapid speech reveals that only [r] and [l] regularly occur in this environment in both dialects; [s n ɸ x] occur in standard Spanish, while in MCS rapid speech [s] and [n] rarely occur, and [ɸ] and [x] never occur; the word-final segments [n ɬ l̥ f̬ ḟ̬ r̥] occur in MCS but do not occur in this environment in standard Spanish.

At this point, it becomes obvious that a rule of the type previously shown in (3) will not account for the process of final e apocope as it takes place in MCS rapid speech.

One potential rebuttal to the above statement could be that there really is no problem at all, since all that need be done is to simply order the rule of final e apocope before the later processes that convert systematic /s/ to [h] or [ø]; /n/ to [ŋ]; /d/ to [ø]; /r/ to [r̬] or [r̥]; /l/ to [ɬ] or [l̥]; and /x/ to [ø].

This type of argument would be well motivated, were it not for the following facts:

1. The inventories of systematic [-syllabic] phonemes of standard Spanish and MCS are not the same, cf.:

a. There is absolutely no synchronic justification for having /x/ as a systematic phoneme in MCS. To do so would force the phonological grammar of MCS to contain a rule of the type:

(7) /x/ → [h]

There is, however, no evidence for the presence of /x/ in MCS, either underlyingly, or at the surface level. In MCS, the only motivated systematic phoneme for /x/ of the standard language is /h/, cf.:

(8) gente 'people' /hente/ → [hẽŋte]
jorobar 'to annoy' /horobare/ → [horoβáɾ]
reloj(es) 'clock(s)' /r̃elohe+s/ → [r̃elɔ́] ~ [r̃elɔ́he]
giro 'turn' /hiro/ → [híro]
jijón 'type of tree' /hihone/ → [hihóŋ]
jeringar 'to bother' /heringare/[9] → [heriŋgáɾ]

b. The status of systematic /n/, particularly in syllable-final position, as shown in section 4.7 of the present study, could be prone to reanalysis since there is some motivation for positing /ŋ/ instead of /n/.[10]

2. Any solution such as extrinsically ordering a rule of final e apocope before some other later phonological rules, e.g. stress, is of somewhat dubious motivation, since it appeals to the use of extrinsic rule ordering, a device not universally accepted in phonological theory.[11] It has been shown, that under certain conditions, extrinsic rule ordering can be motivated,[12] but in the case of the application of a rule of final e apocope, the only motivation for ordering this rule before other rules in the grammar of MCS which convert /s/ to [h] or [ø]; /d/ to [ø]; /r/ to [ɾ] or [r̥]; /l/ to [ɬ] or [l̥] is to make the derivation come out correctly. While this type of motivation is very pragmatic, it nevertheless is of dubious value in phonological theory.

Without resorting to extrinsically ordering the rule of final e apocope, we are left with the problem of writing a phonological rule which meaningfully describes the environments of the segments [n ŋ h l ɬ l̥ r ɾ ɾ̥ r̥ s], requiring as a first approximation, a rule of the type:

(9) $$[\text{-tense}^{e}] \rightarrow [\emptyset] \,/\, V \left\{ \begin{matrix} n \\ ŋ \\ h \\ l \\ ɬ \\ l̥ \\ r \\ ɾ \\ ɾ̥ \\ r̥ \\ s \end{matrix} \right\}^{1}_{0} \text{___} \#$$

It is clear that these segments do not constitute any type of natural class, the only distinctive features they share being $\begin{bmatrix} \text{-syllabic} \\ \text{+consonantal} \end{bmatrix}$.

A rule such as (9) provides nothing more than observational adequacy, and beyond this is totally meaningless as a phonological rule.

It appears that, within the current framework of generative phonological theory, and without resorting to extrinsic ordering, a possible explanation for the process of final e apocope in MCS is that of a derivational constraint, wherein the rule of final e apocope has the power to look ahead to the surface structure constraints of MCS, determine if its application would result in an impermissible

word-final consonant, and if so the rule would fail to apply. This rule could be given as:

(10) (global) $[-\text{tense}^{e}] \rightarrow [\emptyset] / [\text{condition 1}]$

Condition: The application of this rule must not violate surface structure constraints of MCS, in which the only allowable word-final single consonants in rapid speech are [n ŋ h l ɾ l̥ r f̀ f́ r̥ s]

Since [ɛ] is not among the allowable word-final consonants in MCS rapid speech, the above rule of word-final e apocope, as shown above in (10), since it applies in all rates of speech in MCS, would therefore apply obligatorily after systematic /d/ in normal speech, and the later rapid speech rule of word-final /d/ deletion (see section 3.6.2 of the present study) gives the correct rapid speech surface output, e.g.:

| | | |
|---|---|---|
| (11) | /paredE/ | Underlying form |
| | paréde | Stress |
| | paréd | Word-final e deletion |
| | paré | d deletion |
| | [paré] | Surface form[13] |

In the following underlying forms, the application of the rule of final e apocope would violate the surface structure constraints of MCS, and does therefore not apply:

| | | | |
|---|---|---|---|
| (12) | noche 'night' | /noče/ | [nóče] |
| | combate 'combat' | /kombate/ | [kombáte] |
| | calle 'street' | /kaye/ | [káye] |
| | Palmolive 'Id.' | /palmolibe/ | [palmolíβe] |
| | zapote 'Id.' | /sapote/ | [sapóte] |
| | lumbre 'light' | /lumbre/ | [lúmbre] |
| | llave 'key' | /yabe/ | [yáβe] |

In the following lexical items, however, the application of the rule of final e apocope would not violate the surface structure constraints of rapid speech in MCS, and would therefore apply:

(13) pan 'bread' /pane/ → [pán]

comer 'to eat' /komere/ → [komér] ~ [komé], etc., cf. Section 3.10.3

arroz 'rice' /arose/ → [aróh] ~ [aró]

papel 'paper' /papele/ → [papél] ~ [papé], etc., cf. Section 3.10.3

As has been the case in all phonological descriptions of Spanish heretofore proposed, even a rule of final e apocope with global power will still not account for the fact that after /s/, for no apparent synchronic reason, lax [e] is sometimes deleted, and sometimes not, cf.:

(14) a. lápiz /lapise/ → [lápih] ~ [lápi] ~ [lápis]

arroz 'rice' /arose/ → [aróh] ~ [aró] ~ [arós]

cruz 'cross' /kruse/ → [krúh] ~ [krú] ~ [krús]

lombriz 'earthworm' /lombrise/ → [lombríh] ~ [lombrí] ~ [lombrís]

cortés 'courteous' /kortese/ → [cortéh] ~ [kortés] ~ [kortés]

tos 'cough' /tose/ → [tóh] ~ [tó] ~ [tós]

autobús 'bus' /autobuse/ → [awtobúh] ~ [awtobú] ~ [awtobús]

dosis 'dose' /dosise/ → [dósih] ~ [dósi] ~ [dósis]

| | | | | |
|---|---|---|---|---|
| | crisis | 'Id.' | /krisise/ → | [krísih] ~ [krísi] ~ [krísis] |
| | compás | 'beat' | /kompase/ → | [kompáh] ~ [kompá] ~ [kompás] |
| (14) b. | frase | 'sentence' | /frase/ → | [fráse] |
| | clase | 'class' | /klase/ → | [kláse] |
| | base | 'Id.' | /base/ → | [báse] |
| | ápice | 'apex' | /apise/ → | [ápise] |
| | índice | 'index' | /indise/ → | [índise] |
| | envase | 'bottling' | /enbase/ → | [enbáse] |

As there is no motivated synchronic reason why lax [e] is deleted after /s/ in some cases (14a), and not deleted in others (14b), the items that do not undergo the major rule of final e apocope must simply be marked in the lexicon as [-final e apocope], i.e. lexical items such as those found in (14a) would be unmarked for the rule of final e apocope, while those in (14b) must be marked [-final e apocope].

As also pointed out in Harris (1969, p. 178), there is a small number of learned words of Greek and Latin origin which are exceptions to final e apocope, e.g.:

| | | | |
|---|---|---|---|
| (15) | pene 'penis' | /pene/ → | [péne] |
| | prole 'progeny' | /prole/ → | [próle] |
| | epipáctide | /epipaktide/ → | [epipáti̯de] |
| | Melpómene 'Id.' | /melpomene/ → | [melpómene] |

Lexical items such as those shown in (15) must likewise be specified in the lexicon as [-final e apocope].

The concept of rules "looking ahead" to the surface structure constraints of a language to obtain information relative to the application or non-application of native phonological rules appears to be

well motivated if one takes into account lexical borrowings. Consider the following borrowings into MCS:

| (16) | MCS | English |
|---|---|---|
| a. | mitin < English meeting | [míyt$^{h}$iŋ] |
| b. | Colgate < English Colgate | [k$^{h}$ólgeyt] |
| c. | becon < English bacon | [béyk$^{h}$ən] |
| d. | Babe < English Babe | [béyb] |

The English pronunciation of items (16b), (c), and (d) all violate word-final surface structure constraints of MCS rapid speech; item (16a) does not. The segment [ŋ] is permissible in word-final position in rapid speech in MCS, therefore, no change is necessary for this segment, and the word mitin is pronounced as [mítiŋ] in MCS.[14] All other items, i.e. (16b), (c), (d), in their English pronunciation, contain word-final consonant(s) which violate surface structure constraints of MCS, and their pronunciation in MCS rapid speech results from various possible solutions:

| (17) | | | |
|---|---|---|---|
| a. | mitin | [mítiŋ] |
| b. | Colgate | [kolgáte] |
| c. | becon | [békoŋ] ~ [békõ] ~ [békon] |
| d. | Babe | [bábe] |

Because the English pronunciation of (17b) Colgate has a word-final [t], which violates a surface structure of MCS, the word-final lax [e] from the underlying form, presumably /kolgate/, is not apocopated.

Lexical item (17c), becon,[15] in its English pronunciation also contains an infrequent word-final nasal in MCS rapid speech. Therefore, alveolar [n] is replaced by velar [ŋ], since this is the most frequent word-final nasal in MCS rapid speech.

Item (17d), Babe, commonly heard in the proper name 'Babe Ruth' by older Miami-Cuban baseball fans, contains the word-final consonant [b]. e apocope, therefore, cannot apply to this form because this would result in a violation of word-final consonant constraints in the rapid speech of this dialect.

It has been suggested in this section that a rule of final e apocope in MCS be given the global power to "look ahead" to the phonetic form to see whether the surface structure constraints of the language would be violated in order to determine its applicability. Without resorting to the somewhat questionable device of extrinsic rule ordering, a rule of final e apocope with global power, as proposed in this section, appears to be one means of accounting for this process in MCS rapid speech in a perhaps more linguistically significant fashion. The motivation for such a rule as proposed herein, whose applicability is based on derivational constraints, appears to be supported by the phonetic solutions found in many lexical borrowings in current use in MCS.

For those linguists who feel that extrinsic rule ordering is well motivated, a derivational constraint as offered in this section will have little or no appeal. For those who question the psychological reality of extrinsic rule ordering, however, a rule such as shown in (10) may provide a somewhat more meaningful solution.

A rule such as proposed in (10) is, unfortunately, not very strongly motivated, and it admittedly does contain a self-fulfilling condition. In the final analysis, however, while being a rather complicated piece of machinery to avoid extrinsic rule ordering, the proposed derivational constraint would appear to be more linguistically

significant, than simply ordering final e apocope to take place after the rule of stress, merely to get the model to crank out the correct surface forms.

In the final analysis, the only solution to the problem of dealing with this phonological process of final e apocope seems to be that final e apocope is a global rule, and it looks ahead to see if in the given rate of speech no unallowable segment would surface.

Looking once again at the possible word-final consonants that may appear on the surface level in Spanish, [s n đ r l x], it appears that Spanish surface structure constraints move in the direction of trying to rid themselves of true consonants in word-final environments, i.e. the most frequently deleted consonants in word-final environments are /x/, /d/, and /s/, which are all [-sonorant]; the most stable (i.e. the least frequently deleted) of these possible word-final consonants are /n/, /l/, and /r/, all of which are [+sonorant].

4.3 Compensatory Vowel Lengthening--a Global Rule

Consider the following minimal pairs, both with and without syllable-final /s/ in preconsonantal position in standard American Spanish:

| (18) | Lexical item | Underlying form | Phonetic output |
|---|---|---|---|
| a. | busque 'look for' (imper.) | /buske/ | [búske] |
| b. | buque 'ship' | /buke/ | [búke] |
| c. | pastillas 'pills' | /pastiyas/ | [pastíyas] |
| d. | patillas 'sideburns' | /patiyas/ | [patíyas] |
| e. | pescado 'fish' | /peskado/ | [peskáđo] |
| f. | pecado 'sin' | /pekado/ | [pekáđo] |

The minimal pairs (18a) and (b); (18c) and (d); and (18e) and (f) differ only by the presence or absence of preconsonantal [s].

In many Spanish dialects,[16] however, including MCS, in rapid speech, systematic /s/ may optionally appear as [h] or [ø] in syllable-final position. In such dialects, when syllable-final /s/ appears as [ø], pairs of lexical items such as those shown in (18) would be phonetically neutralized, were there no other compensatory morphophonemic change taking place. In such a situation, the minimal pairs shown in (18) would appear as shown below in (19):

(19)

| | Lexical item | Underlying form | Phonetic output |
|---|---|---|---|
| a. | busque 'look for' | /buske/ | [bú̌ke] |
| b. | buque 'ship' | /buke/ | [bú̌ke] |
| c. | pastillas 'pills' | /pastiyas/ | [patíyas] |
| d. | patillas 'sideburns' | /patiyas/ | [patíyas] |
| e. | pescado 'fish' | /peskado/ | [pekǎ̀o] |
| f. | pecado 'sin' | /pekado/ | [pekǎ̀o] |

It has been shown, however, in Hammond (1973), that the phonetic outputs shown in (19) for items (a), (c), and (e) are impossible in MCS, and that when systematic /s/ appears as [ø] in rapid speech in preconsonantal syllable-final position, an obligatory compensatory vowel lengthening occurs in the vowel preceding the systematic /s/ which is phonetically realized as [ø], thereby maintaining perceptual distinguishability of lexical items previously shown in (18) and (19), as shown below in (20):

(20) Miami-Cuban Spanish rapid speech:

| Lexical item | Underlying form | Phonetic output |
|---|---|---|
| a. busque 'look for' | /buske/ | [bú:ke] |
| b. buque 'ship' | /buke/ | [búke] |
| c. pastillas 'pills' | /pastiya+s/ | [pa:tíyah] |
| d. patillas 'sideburns' | /patiya+s/ | [patíyah] |
| e. pescado 'fish' | /peskado/ | [pe:kád̸o] |
| f. pecado 'sin' | /pekado/ | [pekád̸o] |

It is apparent from the data in (18), (19), and (20) that the phonological grammar of MCS must contain the two rules, shown as (21) and (22) which occur in rapid speech, and which are not found in the standard language.[17]

(21) SYLLABLE-FINAL S-DELETION (optional in rapid speech)

/s/ → [ø] / ____$

(22) COMPENSATORY VOWEL LENGTHENING

V → V: / ____C

condition: If s-deletion has applied to this form, then this must also apply.

The rule of syllable-final s-deletion is quite straightforward, and requires no further explanation. Although this rule is optional in MCS rapid speech, if it does not apply, then a rule of preconsonantal s-aspiration must apply in this same environment. This rule of syllable-final s-aspiration is shown as (23):

(23) SYLLABLE-FINAL S-ASPIRATION

/s/ → [h] / ____$

Since either the rule of SYLLABLE-FINAL S-ASPIRATION or SYLLABLE-FINAL S-DELETION must occur in MCS rapid speech, these two rules may be collapsed, as shown below in (24):

(24) SYLLABLE-FINAL S-DELETION OR S-ASPIRATION
(obligatory in rapid speech)

$$/s/ \rightarrow \begin{cases} [h] \\ [\emptyset] \end{cases} \quad / ____\$ \qquad \begin{matrix} \text{a.} \\ \\ \text{b.} \end{matrix}$$

condition: Part (a) is optional.[18]

While the rule of syllable-final s-deletion was quite straightforward, the rule of compensatory vowel lengthening is more problematic, and hence less appealing, mainly because of the condition attached to it. There are, of course, several ways of avoiding this type of rule. The rules of s-deletion and compensatory vowel lengthening could be combined, and written as a transformational rule, as shown in (25) below:

(25) $\begin{matrix} V & /s/ & C \\ 1 & 2 & 3 \end{matrix} \Rightarrow \begin{matrix} V: & \emptyset & C \\ 1 & 2 & 3 \end{matrix}$

Another potential way of avoiding the rule of compensatory vowel lengthening would be to suggest a rule such as shown in (26) below, which would apply after the rule of s-deletion (previously shown as (21)):

(26) $V \rightarrow V: \; / \; [+\text{rule } 21]$

However, consider the following data from standard Spanish:

(27)

| | Lexical item | Underlying form | Phonetic representation |
|---|---|---|---|
| a. | ves 'you see' | /bes/ | [bés] |
| b. | ve 'he sees' | /be/ | [bé] |

| | | | |
|---|---|---|---|
| c. | taxis 'taxis' | /taksis/ | [táksis] |
| d. | taxi 'taxi' | /taksi/ | [táksi] |
| e. | comprendes 'you understand' | /komprendes/ | [kompréndes] |
| f. | comprende 'he understands' | /komprende/ | [kompréndе] |

As was the case with systematic /s/ in pre-consonantal position, word-final /s/, in many Spanish dialects, including MCS, may also be deleted in rapid speech, which happens in 74.4% of the cases. The lexical items in (27) would then appear as follows in these s-deletion dialects:

| (28) | Lexical item | Underlying form | Phonetic representation |
|---|---|---|---|
| a. | ves 'you see' | /bes/ | [bé] |
| b. | ve 'he sees' | /be/ | [bé] |
| c. | taxis 'taxis' | /taksis/ | [táksi] |
| d. | taxi 'taxi' | /taksi/ | [táksi] |
| e. | comprendes 'you understand' | /komprendes/ | [kompréndе] |
| f. | comprende 'he understands' | /komprende/ | [kompréndе] |

In dialects where word-final s deletion occurs, in the absence of any other compensatory morphophonemic change, items (28a) and (b); (28c) and (d); and (28e) and (f) are neutralized at the surface level in rapid speech.

In the case of MCS, it was shown (Hammond, 1973) that when s deletion occurs in word-final position, there is no accompanying morphophonemic change occurring, and the minimal pairs of the standard language (shown above in (27))are in fact neutralized in rapid speech.[19]

Therefore, the phonetic representations shown in (28) above would also be those of MCS rapid speech.

The data in (27) and (28) show that in MCS, as well as in other dialects, there must be a rule of word-final s deletion. It is not necessary to have a separate rule for the processes of word-final s-deletion or for word-final s-aspiration, because the grammar already contains a rule of SYLLABLE-FINAL S-DELETION OR S-ASPIRATION, which will also apply in these cases. This rule was previously shown in (24).

It should be reiterated here, that because syllable-final s deletion in preconsonantal position and word-final s-deletion are the same phonological process, it would be ad hoc to formulate them as two separate processes, which a solution using a transformational rule, previously shown in (25), forces one to do.

Recall now this proposed transformational rule, repeated below for the reader's convenience as (29):

(29) $\begin{matrix} V & /s/ & C \\ 1 & 2 & 3 \end{matrix} \Rightarrow \begin{matrix} V: & \emptyset & C \\ 1 & 2 & 3 \end{matrix}$

Recall further that s-deletion in preconsonantal word-medial position in MCS rapid speech cannot occur without compensatory vowel lengthening, (rules (21) and (22)), while s-deletion in word-final position does occur without compensatory vowel lengthening. The convergence of these facts clearly suggests that compensatory vowel lengthening and s-deletion are independent phonological processes, and therefore, a rule such as (29), which fails to capture this important notion, must be rejected as totally ad hoc. Such a transformational rule provides nothing more than observational adequacy, and not only does it fail to

show that s-deletion and compensatory vowel lengthening may be independent phonological processes, but rather, it suggests that they are both necessarily part of the same processes.

Consider now the plausibility of the rule proposed above in (26), repeated below for the reader's convenience as (30):

(30) V → V: / ____[+rule 21]

Since it has been shown that s-deletion and compensatory vowel lengthening may be two independent phonological processes, a rule such as proposed in (30) must likewise be rejected as *ad hoc*. Resorting to the type of notational device as in rule (30) again only provides observational adequacy--it tells nothing about what phonological processes are taking place, or how, or most importantly, why they are taking place.

The need for the inclusion of a rule of s-deletion in the phonological grammar of MCS appears to be well motivated, both in preconsonantal and word-final environments.

The need for the inclusion of a rule of compensatory vowel lengthening appears, likewise, to be well motivated for the phonological grammar of MCS rapid speech. Consider, however, one serious problem involved with such a rule, as previously shown in (22), and repeated below as (31) for the reader's convenience, if this rule did not have the proposed condition as shown in (22):

(31) COMPENSATORY VOWEL LENGTHENING

V → V: / ____C

Unfortunately, if this rule of compensatory vowel lengthening is not somehow constrained, it will lengthen *all* vowels occurring in preconsonantal position in MCS. An example of such an incorrect derivation is shown below in (32).

| (32) | lobo | abogado | moro | |
|---|---|---|---|---|
| | /lobo/ | /abogado/ | /moro/ | underlying form |
| | loβo | aβoɣaðo | | spirantization |
| | lóβo | aβoɣáðo | móro | stress |
| | ló:βo | a:βo:ɣá:ðo | mó:ro | comp. vowel lengthening |
| | *[ló:βo] | *[a:βo:ɣá:ðo] | *[mó:ro] | surface form |

The rule of compensatory vowel lengthening must, therefore, be somehow constrained so as to apply only to those preconsonantal environments in which systematic /s/ has first been deleted.

These facts converge to show that the rule of COMPENSATORY VOWEL LENGTHENING must have a built-in global power, to allow it to "look back" in the derivation, and apply only to those environments in which the rule of preconsonantal s-deletion has previously applied. This global power is, of course, exactly what is expressed by the condition which accompanies rule (22). Consider the following sample derivations:

| (33) | pastillas | pescado | lobo | moro | |
|---|---|---|---|---|---|
| | /pastiyas/ | /peskado/ | /lobo/ | /moro/ | underlying form |
| | patiya | pekado | | | s-deletion |
| | | pekaðo | lóβo | | spirantization |
| | patíya | pekáðo | lóβo | móro | stress |
| | pa:tíya | pe:káðo | | | comp. vowel length. (global) |
| | [pa:tíya] | [pe:káðo] | [lóβo] | [móro] | surface form |

The derivations shown in (33) show that when the rule of compensatory vowel lengthening is given the global power to apply only in those preconsonantal environments in which s-deletion has previously

applied, then compensatory vowel lengthening correctly applies in pastillas and pescado, but not in lobo and moro, giving the correct phonetic manifestations.

The phonological facts of MCS appear to motivate the need for a global rule of compensatory vowel lengthening as the only viable means of describing this phonological process in a meaningful way. Let us consider, however, one other possible objection, that a rule of compensatory vowel lengthening is not a global rule at all, but merely a contigency rule, i.e. that in its application it does not have to "look back," but rather that in its application is contingent on the immediate prior application of the rule of preconsonantal s-deletion.

Miller (1975) has suggested the concept of contingent rule ordering, which claims to account for phonological processes such as s-deletion and compensatory vowel lengthening, without resorting to the use of global rules. Miller assumes a dominant rule (here s-deletion) and a subcase (compensatory vowel lengthening in MCS) in which the effect of the dominant rule is simultaneously realized in the subcase, i.e. there is no need for ordering, extrinsic or otherwise. Miller's work is currently undergoing revision, but from the preliminary work, it is not at all obvious how, if preconsonantal s-deletion and word-final s-deletion are to be captured as the same phonological process, which they have been shown to be in MCS rapid speech, this concept of simultaneous contingent rule ordering is to be effected, in a motivated fashion, in preconsonantal environments, but not in word-final environments.

While the unconstrained use of global rules is an extremely powerful and potentially dangerous device, in the absence of a more

highly motivated solution, such rules must be allowed in phonological descriptions.[20]

The type of global rule proposed in this study falls within the previously mentioned constraint proposed in Kiparsky (1973), that a global rule may apply only in a derived environment, and may never apply to an underlying form. It is obvious that the global rule of compensatory vowel lengthening discussed in this study applies only to derived environments, i.e. it applies only in environments in which s-deletion has previously occurred.

The facts concerning the phonological processes of preconsonantal s-deletion and compensatory vowel lengthening in MCS rapid speech would appear to indicate the necessity of the inclusion of a global rule in the phonological component of MCS. Any other approach that would provide the same degree of explanatory or descriptive adequacy is not immediately obvious.

## 4.4 A Proposal for a Theory of Explanation in Phonology--a Translexical Constraint

It has been shown that when systematic /s/ in preconsonantal word-medial position is deleted in rapid speech in MCS, a rule of compensatory vowel lengthening must obligatorily apply. In such lexical items in MCS rapid speech, when preconsonantal /s/ has been deleted, this vowel lengthening is the only perceptual cue which remains to distinguish pairs of lexical items such as those shown in (34):

| (34) | Lexical item | Standard Spanish | MCS |
|---|---|---|---|
| a. | busque 'look for' | [búske] | [bú:ke] |
| b. | buque 'ship' | [búke] | [búke] |
| c. | pastillas 'pills' | [pastíyas] | [pa:tíya] |

| | | | |
|---|---|---|---|
| d. | patillas 'sideburns' | [patíyas] | [patíya] |
| e. | pescado 'fish' | [peskáđo] | [pe:káđo] |
| f. | pecado 'sin' | [pekáđo] | [pekáđo] |

The minimal pairs (34a) and (b); (34c) and (d); (34e) and (4) are phonetically distinguished in the standard language by the presence or absence of preconsonantal [s], and in MCS rapid speech by the presence or absence of the feature [long] in the vowel immediately preceding deleted /s/.

It would appear then that compensatory vowel lengthening in MCS rapid speech has an explanatory purpose in the phonological component,[21] i.e. that of maintaining perceptual distinguishability between items such as those shown in (34):

Consider now the following items:

| (35) | Lexical item | Standard pronunciation |
|---|---|---|
| a. | hasta 'until' | [ásta] |
| b. | ata 'he ties' | [áta] |
| c. | pasta 'paste' | [pásta] |
| d. | pata 'paw' | [páta] |
| e. | después 'after' | [despwés] |
| f. | *depués | *[depwés] |
| g. | hospital 'hospital' | [ospitál] |
| h. | *hopital | *[opitál] |

In MCS, the lexical items in (36), shown below, may appear as follows in rapid speech:

(36) a. hasta 'until' [á:ta]

b. ata 'he ties' [áta]

c. pasta 'paste' [pá:ta]

d. pata 'paw' [páta]

The question then arises as to the phonetic manifestation of lexical items such as (35e) and (g). In MCS rapid speech, when preconsonantal /s/ appears as [Ø] in these two items, would compensatory vowel lengthening also occur? If compensatory vowel lengthening is indeed motivated by a need for perceptual distinguishability, and since there is no lexical item in the language like *depués (35f) or *hopital (35h), there would appear to be no motivation for the rule of compensatory vowel lengthening to take place. The possible phonetic forms of (35e) and (g) are shown below:

| (37) | Lexical item | Without comp. V lengthening | With comp. V lengthening |
|---|---|---|---|
| a. | después 'after' | [depwé] | [de:pwé] |
| b. | hospital 'hospital' | [opitál] | [o:pitál] |

If, in fact, the phonetic forms of lexical items such as después and hospital do appear respectively as [depwé] and [opitál], i.e. without compensatory vowel lengthening, then it would appear that compensatory vowel lengthening is indeed motivated by a need for the maintenance of semantic distinctiveness. This being the case, we would have evidence for another global power attached to the rule of compensatory vowel lengthening--a translexical constraint, which allows the rule of compensatory vowel lengthening to scan the lexicon of MCS, in order to determine if its application is necessary to maintain semantic distinctiveness. Compare the following derivations:

| (38) | a. hasta | b. después | |
|---|---|---|---|
| | /asta/ | /despues/ | underlying form |
| | ata | depues | s-deletion |
| | áta | depués | stress |
| | | depwés | glide formation |
| | á:ta | | comp. V lengthening (global & translexical) |
| | [á:ta] | [depwés] | surface form |

A rule of compensatory vowel lengthening with the proposed translexical constraint would scan the lexicon of MCS, determine in the case of (38a) that there existed a form in the language such as ata 'he ties' [áta], and therefore apply, giving the surface output [á:ta] for lexical item (38a), in the case of lexical item (38b), the rule of compensatory vowel lengthening, with the proposed translexical constraint, would again scan the lexicon of MCS, determine that there was no other possible lexical item as *depués [depwés], hence fail to apply, giving the phonetic form [depwés] for the lexical item después, as shown in (38b). The theory behind the translexical constraint proposed for the rule of compensatory vowel lengthening appears to be well motivated, and given our present understanding of how language works, such a possibility should be investigated. The one uncontrolled variable is the human mind, which often does not work in ways proposed by linguistic theory. Whether such a theory does in fact work, relative to the MCS data presented herein, is an empirical question. The translexical constraint, as proposed, should in theory work, not only in MCS, but in any natural language in which s-deletion and compensatory vowel lengthening, as outlined in this study, are real phonological processes.

4.5 Regularization of Compounds

Kiparsky (1973, pp. 37-129) has shown that, in many natural languages, there is a tendency for irregular forms to become regular in: (1) related compound forms, c.f. English *he casts*, which is regular, and the past tense form *he cast*, which is irregular; but the corresponding forms of the related compound verb *to broadcast* are both regular: present tense *he broadcasts*; past tense *he broadcasted*, i.e. the irregular past tense of the compound verbal form has become regularized to *he broadcasted*; (2) and in derived forms, such as proper names, e.g. *child - children* → *(the) Childs*, *(the) Fairchilds*, both of which are regularized in the plural. This morphological restructuring in the direction of regularity is, however, only a tendency, because apparently both the irregular and regularized compound forms do exist in different idiolects of native speakers of American English, i.e. both *he broadcast* and *he broadcasted* may be heard.

In another compound verb related to the verb *to cast*, *to forecast*, both the regularized and irregular past tense forms *he forecasted* and *he forecast* can be regularly heard in this North Central Florida area on radio and television news reports and weather forecasts.

This tendency toward regularization of compound forms has also been reported in the Spanish of the state of Guanajuato, Mexico. Boyd-Bowman (1960, pp. 171-72) reported that irregular forms such as *(yo) bendije*, *(yo) maldije*, *(yo) contradije*, *(yo) conduje*, *(yo) produje*, *(yo) traduje*, *(el) satisfizo*, *(ellos) detuvieron*, *(yo) compuse*, and *(él) dispuso*, tend to become regularized to *bendecí*, *maldecí*, *contradecí*, *conducí*, *producí*, *traducí*, *satisfació*, *detenieron*, *componí*, and *dispunió* in this dialect of Mexican Spanish.

There is a great deal of evidence available from MCS which supports Kiparsky's theory of a tendency towards regularization of compound forms, and the convergence of these data, available from many unrelated languages, tend to support such a concept as being perhaps a universal linguistic tendency.

Consider the following data from MCS:

| (39) | Verb | Preterite | Future |
|---|---|---|---|
| a. | decir<br>'to say' | dijo<br>'he said' | dirá<br>'he will say' |
| b. | bendecir<br>'to bless' | bendijo~bendició<br>'he blessed' | bendirá~bendecirá<br>'he will bless' |
| c. | maldecir<br>'to curse' | maldijo~maldició<br>'he cursed' | maldirá~maldecirá<br>'he will curse' |
| d. | predecir<br>'to predict' | predijo~predició<br>'he predicted' | predirá~predecirá<br>'he will predict' |
| e. | hacer<br>'to do' | hizo<br>'he did' | hará<br>'he will do' |
| f. | satisfacer<br>'to satisfy' | satisfizo~satisfació<br>'he satisfied' | satisfará~satisfacerá<br>'he will satisfy' |
| g. | poner<br>'to put' | puso<br>'he put' | pondrá<br>'he will put' |
| h. | imponer<br>'to impose' | impuso~imponió<br>' he imposed' | impondrá~imponerá<br>'he will impose' |
| i. | tener<br>'to have' | tuvo<br>'he had' | tendrá<br>'he will have' |
| j. | sostener<br>'to sustain' | sostuvo~sostenió<br>'he sustained' | sostendrá~sostenerá[22]<br>'he will sustain' |

The irregular preterite and future tense forms of the non-compound verbs (39a), (3), (g) and (i) are always heard in MCS rapid speech as shown above, i.e., these forms are always heard in normal MCS rapid speech as the standard forms.[23]

In all cases, however, the preterite and future tense forms of the related compounds of these verbs, shown in (39b), (c), (d), (f), (h), and (j) are regularly heard either as the irregular or as the regularized forms.[24]

There has been no attempt made in this study to determine the percentage of occurrence of these irregular vs. regularized compounds shown in (39) because of a lack of success in constructing a satisfactory eliciting instrument.[25] Native speakers of MCS, as well as native speakers of many other dialects, when asked what the preterite or future forms of a verb such as satisfacer are, become very hesitant, and often confused, and will usually admit that they really do not know what the "correct" form is.[26]

The question then arises as to why these compound irregular verb forms show a tendency to become regularized, although the corresponding non-compound forms never show this type of tendency in normal rapid speech.

Although I do not know what motivation there might be for these phenomena in the languages discussed in Kiparsky (1973), there is, nevertheless, a discernable motivation to be found in MCS.

Although items (39b), (c), and (d) are clearly related diachronically to (39a), i.e., they derive from Latin prefixes placed on the verb decir; (39f) is clearly diachronically related to (39e) /satis+facere/; (39h) is diachronically related to (39g) /in+ponere/; and (39j) would appear to be diachronically related to (39i) /sos+tenere/,[27] this historical relationship is apparently not present in the synchronic grammar of many speakers of MCS.

In the case of the historically related pair hacer and satisfacer, most educated speakers of MCS, when asked if they realized that these verbs are related, and that satisfacer is really made up of the verb hacer with the prefix satis, state that they have never thought of these verbs as being related. When the historical development of satisfacer is explained to them, most speakers of MCS can then see this relationship between hacer and satisfacer.[28] It is apparent in these speakers that there is no synchronic relationship between these lexical items in their phonological grammar.

It is obvious that the relationship between hacer and satisfacer is more obscured, because of the change /f/ → [ø], than in the other related verbs shown in (39), i.e., decir with maldecir, bendecir, predecir, etc. Nevertheless, although these forms are obviously, at least to a linguist, composed of prefix decir, they are simply not synchronically related by many speakers of MCS (the semantic interpretation helps to obscure this relationship--cf. 'to say'; 'to curse'; 'to bless'; 'to predict').

The non-compound verbs shown in (39) are highly irregular in both the preterite and future tenses. When the historically related compounds are regularized, speakers are obviously analogizing, and inflecting these verbs as though they wereregular -er or -ir Spanish verbs, cf.

(40)

| | Verb | Preterite | Future |
|---|---|---|---|
| a. | sentir (regular) | sintió | sentirá |
| b. | decir | dijo | dirá |
| c. | bendecir | bendició | bendecirá |
| d. | comer (regular) | comió | comerá |

| | | | |
|---|---|---|---|
| e. | hacer | hizo | hará |
| f. | satisfacer | satisfació | satisfacerá |

Another factor which must be considered is that the irregular non-compound verbs decir, hacer, tener, and poner are among the most frequently used verbs in the Spanish language. On the other hand verbs like maldecir, predecir, bendecir, imponer, sostener, and satisfacer are much less frequently used in everyday speech in MCS. Therefore, native speakers of Spanish, as children, are constantly exposed to the irregular forms of decir, tener, hacer, and poner, but are seldom exposed to the "correct" forms of the historically related compounds, and often as adults, they are left to improvise when using such verbs.

It would appear then, that at least in the case of MCS, there is a well-motivated explanation as to why the above non-compound verbs do not show a tendency to become regularized, while their historicaaly related compound forms do show such a tendency.

## 4.6 The Relationship of [strident] and [high] to Surface Forms of Non-liquid Consonants

Consider the following data from Guitart (1973), concerning the surface forms for the following lexical items from the Educated Spanish of Havana (henceforth ESH):

| (41) | Lexical item | ESH | Standard Spanish |
|---|---|---|---|
| a. | afta | [áhta] | [ásta] |
| b. | difteria | [dihtérya] | [diftérya] |
| c. | es así | [éhasí] | [ésasí] |
| d. | son amigos | [sóŋamígoh] | [sónamígos] |
| e. | todos | [tóʝoh] | [tóʝos] |
| f. | allí están! | [ayíehtáŋ] | [ayíestán] |

| | | | |
|---|---|---|---|
| g. | asma | [áhma] | [ásma] |
| h. | absoluto | [aksolúto] | [a$\not{b}$solúto] ~ [apsolúto] |
| i. | eclipsar | [ekli$\not{g}$sár] | [eklipsár] |
| j. | étnico | [é$\not{g}$niko] | [étniko] ~ [é$\not{g}$niko] |
| k. | admitir | [a$\not{g}$mitír] | [a$\not{g}$mitír] |

The data in (1) show that in colloquial speech in ESH, all non-liquid [-syllabic] segments appear as velars or pharyngeals in syllable-final and word-final positions. That is, all non-liquid [-syllabic] non-word-initial segments are neutralized as to point of articulation, appearing either as velars or pharyngeals. Guitart (1973) has observed that syllable-final and word-final /f/ and /s/ are neutralized to [h]; the remaining obstruents, that may occur in syllable-final or word-final position, /ptkbdg/ are neutralized to [$\not{g}$]; the only remaining non-lateral, non-syllabic segments which may occur in syllable-final or word-final positions are nasals, which are neutralized in ESH to [ŋ]. Guitart (1973) has noted that both /f/ and /s/ are strident, while /ptkbdgnm/ are [-strident]; [h] is [-high], while both [$\not{g}$] and [ŋ] are [ high]. Guitart has concluded that the relationship between these velar or pharyngeal neutralized non-lateral non-syllabic segments is as follows: [$\alpha$strident] → [-$\alpha$high]; i.e., [+strident] → [h]; [-strident] → [$\not{g}$] or [ŋ].

The word described in Guitart (1973, p. 154) can be formalized as follows:

(42)
$$\begin{bmatrix} -\text{syl} \\ \begin{Bmatrix} +\text{nas} \\ -\text{son} \end{Bmatrix} \\ \alpha\text{strid} \end{bmatrix} \rightarrow \begin{bmatrix} -\text{back} \\ -\text{mid} \\ -\alpha\text{high} \end{bmatrix} / \underline{\quad} \begin{matrix} \$ \\ \# \end{matrix}$$

The rule shown above in (42) is the rule Guitart gives, correcting a typographical omission. Also, [-strident], [-anterior] and [-coronal] for [h] will be presumably supplied by using the universal interpretive conventions (Chomsky and Halle, 1968, Chapter 9) as linking rules.

Guitart (1973, p. 154) states that the above rule "expresses the apparently significant generalization that in ESH all non-liquid consonants are realized as either velars or pharyngeals in either syllable-final or word-final position . . . the choice between pharyngeal and velar depends on whether or not the underlying segment is a strident."

Consider now, the same lexical items shown above in (41) from ESH as their surface forms normally appear in MCS rapid speech:

(43) a. afta [áfta] ~ [áhta]

b. difteria [diftérya] ~ [dihtérya]

c. es así [éhasí] ~ [éasí]

d. son amigos [sóŋamígoh] ~ [sóŋamígo]

e. todos [tódoh] ~ [tódo]

f. allí están! [ayíehtáŋ] ~ [ayíetáŋ]

g. asma [áhma] ~ [áma]

h. absoluto [absolúto] ~ [aksolúto]

i. eclipsar [eklipsár] ~ [ekligsár]

j. étnico [édniko] ~ [égniko]

k. admitir [admitír] ~ [agmitír]

In items (43a), (b), (h), (i), (j), and (k), the first of the two surface forms shown is the most frequent in MCS rapid speech.

In comparing the data shown from ESH in (41), with that of MCS shown in (43), the following comparisons are noted:

1. In MCS, syllable-final /f/ most frequently appears phonetically as [f], and only occasionally as [h]. In ESH, however, syllable-final /f/ always appears as [h] (items a and b).

2. Items c, d, e, and g show that in MCS syllable-final or word-final /s/ may appear either as [h] or [ø], while in ESH /s/ in these environments appears only as [h].

3. Items d and f show that word-final nasals appear as [ŋ] in both MCS and ESH.

4. Items h, i, j, and k show that the underlying [-continuant] obstruents appear as either velar [k], [ǵ], or [g] in ESH, but appear as either [p t k ƀ ɗ ǵ] or as velar [k] or [ǵ] in MCS.

The data in (41) and (43) show that there are several important differences in the surface manifestations of non-liquid [-syllabic] segments in MCS and ESH.

While Guitart's (1973) rule (42) above captures the generalization that stridency and tongue height are inversely related in ESH, it is clear that this same relationship does not yet occur in MCS.

It may be the case that MCS is in a state of phonological change in the case of these non-liquid [-syllabic] segments, and that eventually these segments will show this same relationship between tongue height and stridency, or the non-liquid [-syllabic] segments of ESH may be in a state of change and will eventually appear as they now do in MCS. It seems more likely, however, that neither of these cases is true, but rather that the non-liquid [-syllabic] segments in both MCS and ESH are currently in a state of change.

In terms of word-final and syllable-final nasals, both in MCS and ESH, [ŋ] appears as the surface form. Most Caribbean dialects,

Andalusian Spanish, as well as Madrileño Spanish (see Guitart, 1973, p. 176, note 4) show the tendency for syllable-final and word-final nasals to appear as [ŋ].

The phonological change involving systematic /s/ appears to be more advanced in MCS than in ESH. Guitart claims that /s/ does not appear in ESH as [ø], as it may in MCS. In comparing other Spanish dialects, e.g., Caribbean Spanish, Argentinian Spanish, Andalusian Spanish, etc., the change involving /s/ appearing as [h] or [ø] in syllable-final or word-final positions appears clearly to be in this direction, rather than allowing /s/ to appear as [h], but not as [ø], as is the case in ESH. It seems unlikely that since /s/ has undergone the phonological change allowing /s/ to appear as [ø] in these environments, that the converse would take place, i.e., that in MCS (and all other dialects in which /s/ may appear as [ø]) a change would take place whereby /s/ could no longer appear as [ø]. In terms of the phonetic representations for systematic /s/, it would appear, therefore, that ESH would continue in the direction of allowing /s/ to appear as [ø] in syllable-final and word-final environments. Were this situation to occur, the [-αhigh] and [αstrident] relationship, currently found in ESH, would no longer be true, since [ø] involves neither feature [strident] or [high].

The strong phonological tendency toward velarization of all [-continuant] obstruents currently in evidence in ESH appears to be more advanced than in MCS. Although not as strong, this tendency is also present in MCS, thereby strengthening Guitart's claim as to the relationship of tongue height and stridency. However, in many Spanish dialects, including Cuban Spanish and MCS, the [+continuant] forms [β̞ ð̞ ɣ̞] show a further tendency:

(44) [β] → [w] ~ [Ø]
[ð] → [Ø]
[ɣ] → [Ø]

This tendency is illustrated below in the following examples:

(45) a. abuela [awéla]
b. hablado [aβláo] ~ [aβláw]
c. lago [láo]
d. la boca [lawóka]
e. estado [ehtáo] ~ [ehtáw]
f. pago [páo]

When [β ð ɣ] are realized as [Ø], the relationship between stridency and tongue height is also destroyed.

Guitart (1973) has shown that in ESH syllable-final /f/ (which never occurs in word-final position in Spanish) regularly appears as [h]. Although this may occur sporadically in MCS, it does not yet appear to be a strong tendency. The exact status of the surface manifestations of /f/ is difficult to ascertain in MCS, however, because of the dearth of commonly used lexical items containing /f/ in syllable-final position. It seems, nevertheless, that there is a tendency now present in MCS in the direction of /f/ → [h]. Strident /f/ may also appear as [-high] [β] in syllable-final environments, e.g., difteria [diβtérya]. In either case, with /f/ appearing as [h] or [β], Guitart's hypothesis as to a significant relationship between tongue height and stridency is supported by these two surface manifestations of /f/.

In terms of the data he presents from ESH, it appears that Guitart (1973) has observed a significant relationship between

stridency and tongue height in [-syllabic] non-liquid consonants in syllable-final and word-final positions. This same relationship, however, does not occur in MCS. Although [+strident] /s/ may appear phonetically as [-high] [h], or a [Ø], and [+strident] /f/ normally appears as [-high] [f] or [h], and [-strident] nasals appear as [+high] [ŋ], the remaining syllable-final or word-final non-liquid [-syllabic] segments /p t k b d g/, all [-strident], may appear phonetically as either [-high] [p t b d β ɸ] or as [+high] [k g ɣ].

It would appear, in terms of the direction of phonological change taking place in MCS and in ESH involving these non-liquid [-syllabic] segments that the surface manifestations will eventually appear as follows, in both dialects, if the current directionality of change continues:

(46) /s/ ⇒ [h] ~ [Ø]
/f/ ⇒ [h]
/n/ → [ŋ]
/m/ → [ŋ]
/p/ → [k] ~ [β]
/t/ → [k] ~ [ɸ]
/k/ → [k] ~ [ɣ]
/b/ → [ɣ] ~ [w] ~ [Ø]
/d/ → [ɣ] ~ [Ø]
/g/ → [ɣ] ~ [Ø]

It would appear then, that Guitart (1973) has indeed expressed a linguistically significant generalization regarding stridency and tongue height in ESH, but this relationship has only captured ESH in the state of phonological change, and perhaps may therefore express

only a fortuitous coincidence. In terms of the current situation in MCS, and in terms of evidence examined from other Spanish dialects involving non-liquid [-syllabic] segments in word-final and syllable-final positions, if these segments in ESH show the phonological changes undergone by other dialects, then it appears likely that the inverse relationship between stridency and tongue height will no longer exist in ESH. It appears much less likely that MCS and other Spanish dialects will undergo the necessary phonological changes so that such an inverse relationship between tongue height and stridency would become a synchronic fact of these dialects.

4.7 Relative Markedness and [+nasal] Segments

Guitart (1973, pp. 157-63) argues that, within the concept of "relative markedness," the phonetic realization of word-final and syllable-final nasals as [ŋ] is natural, i.e., unmarked, except before a following [+syllabic] segment.

Generative phonology traditionally considers that there are three systematic nasal phonemes in Spanish, /n ñ m/, and that the systematic nasal phonemes /ñ/ and /m/ have only the surface manifestations, [ñ] and [m] respectively. The systematic nasal phoneme /n/, however, may have one of seven different surface forms in standard Spanish. The correct surface representation of underlying /n/, [m ɱ n̪ n n̠ ñ or ŋ] is predicted by the following rule of nasal assimilation:[29]

(47)

$$[+\text{nasal}] \rightarrow \begin{bmatrix} \alpha\,\text{cor} \\ \beta\,\text{ant} \\ \gamma\,\text{back} \\ \delta\,\text{distr} \\ \varepsilon\,\text{high} \end{bmatrix} \; / ____ (\#) \; \begin{bmatrix} -\text{syl} \\ \alpha\,\text{cor} \\ \beta\,\text{ant} \\ \gamma\,\text{back} \\ \delta\,\text{dist} \\ \varepsilon\,\text{high} \end{bmatrix}$$

The above rule of nasal assimilation makes the nasal segment homorganic to a following obstruent, as shown by the following surface forms from the standard language:

(48) a. un bote [umbóte]

b. un fósforo [umfósforo]

c. un diente [ṇdyénte]

d. un cigarro [unsiɣáro]

e. un chico [uṉčíko]

f. un llavero [uñyaβéro]

g. un gato [uŋgáto]

Guitart (1973, pp. 47-48) provides the following data concerning the surface manifestations of nasals in closed syllable-final position in ESH:

(49) a. un boleto [u$^{m}_{ŋ}$boléto]

b. un francés [u$^{m}_{ŋ}$fransés]

c. un domingo [uŋdomíŋgo]

d. un señor [uŋseñór]

e. un chiste [uŋčíste]

f. un caballo [uŋkaβáyo]

Guitart (1973, pp. 47-48) states that "in utterance-final position, however, it is only the velar nasal that occurs, without exception." Furthermore, "in ESH, nasals contrast in initial position and intervocalically, as in other dialects."

From the ESH data shown above in (49), it is seen that the velar nasal occurs before dental, alveolar, palato-alveolar, and velar segments (items (49c), (d), (e) and (f), while before bilabial obstruents (item 49a) a coarticulated velar-bilabial nasal occurs, and before

labiodental obstruents (item 49b) a coarticulated velar-labiodental nasal appears.

Therefore, in ESH, unlike standard nasal assimilation dialects of Spanish, complete nasal assimilation to a following obstruent occurs only when the following obstruent is velar (item f); partial nasal assimilation occurs when the following obstruent is bilabial or labiodental (items a and b); nasal assimilation fails to occur before dentals and palato-alveolars (items c and e); dissimilation actually occurs before alveolar segments (item d).

Within his concept of "relative markedness," Guitart (1973) argues that the realization of all [+nasal] segments in closed-syllable and utterence-final positions as velar [ŋ] is more natural, hence less marked, than the assimilation of nasals to the following obstruent, based on physiological ease, simplicity of neurological instructions, and dialect distribution of syllable-final nasals.

Guitart's naturalness argument for [ŋ] is not supported by typological studies. Also, it contradicts some existing statistical studies showing that /ŋ/ is highly complex, relatively rare, very restricted, and is highly marked--more marked than /m/, which is more marked than /n/, (cf. Greenberg's frequency studies and the typological work of Gamkrelidze and Ivanov, 1972 and 1973).

Guitart's argument based on physiological ease is not that "the realization of all nasals as velar in syllable-final position constitutes the least possible degree of neurophysiological effort. Rather what is claimed is that if a nasal segment is to be realized at all in that position, it is easier to realize it as [+back, +high, -mid]" (1973, p. 163). Such an argument, based on physiological ease

is quite hypothetical, given our current understanding of speech production and perception. Why, is it "easier" to realize a nasal as [ŋ], which Guitart describes as ([+back, +high, -mid]) in syllable-final position rather than as [m] or [n], or even as [ø]? Certainly nothing could be physiologically easier than to realize all nasals as [ø].

Guitart's (1973) arguments based on simplicity of neurological instructions, i.e., that it is easier to have one set of neurological instructions that all closed syllable-final nasals be realized as [ŋ] than to have neurological instructions involving six different surface realizations are, by the author's own admission "hypothetical since practically nothing is known about the neurological mechanisms underlying speech production" (p. 160). His argument based on the simplicity of neurological instructions fails to explain, however, why [ŋ], rather than any other nasal, e.g., [m], [n], or [ñ] should be realized in syllable-final position.

Also, there are very few languages around the world, e.g., Ukrainian, Russian, that do not assimilate nasals to following obstruents. Hence, the only empirically verifiable conclusion is that this is the most natural situation, rendering vacuous any hypothetical arguments concerning the relative simplicity of neurological instructions. What is apparent is that the situation concerning the surface manifestations of nasals in both ESH and MCS is unnatural, and hence, highly marked as a system, and much more highly motivated arguments, other than neurological simplicity, are needed to explain such a system of nasals, if indeed there is any plausible explanation, other than that the ESH and MCS nasal systems are simply highly marked,

in light of the fact that most phonological systems involve nasal assimilation to a following obstruent.

Guitart's argument based on dialectal distribution of nasals in syllable-final environments is even less convincing. Any such argument ends up being circular, since although there is a tendency in many Spanish dialects for syllable-final nasals to be velar, there is an equally strong tendency for nasals in this environment to be alveolar; also, in some Spanish dialects, albeit less frequent, syllable-final nasals may be realized as bilabial (Tessen, 1974), or as palato-alveolar (Honsa, 1965).

It would appear, therefore, that Guitart's concept of "relative markedness" should at best be greatly de-emphasized, and at worst be rejected on the grounds of their typologically and statistically-empirical implausibility. Also, the weakest part of Guitart's theory is still that he offers no explanation as to why it should be the velar nasal, rather than any other nasal or [ø] that appears in the environments he discusses. Guitart simply provides no evidence to explain the phenomenon of the appearance of the velar nasal in absolute-final environments and before a following non-velar obstruent, vowel, or glide.

A possible reason for the inability to explain the phenomenon of the velar nasal in some Spanish dialects is that perhaps the systematic phonemic inventory of nasals being posited in these dialects as /m n ñ/ are not correct.

Although, in ESH, the appearance of the velar nasal is limited to utterance-final and syllable-final environments, the surface manifestations of [ŋ] are more widespread in MCS, whereby the velar nasal may

occur in almost all phonological environments, including syllable-initial within an utterance. Compare the following data from MCS rapid speech:

(50) a. un boleto
'a ticket' [unboléto]

b. un francés
'a Frenchman' [unfransés]

c. un domingo
'a Sunday' [undomíngo]

d. un señor
'a gentleman' [unseñór]

e. un rabo
'a tail' [uñrá$\beta$o]

f. un lado
'a side' [unlá$\delta$o]

g. once
'eleven' [ónse]

h. prensa
'press' [prénsa]

i. un chiste
'a joke' [unčíhte]

j. un caballo
'a horse' [unka$\beta$áyo]

k. con hierba
'with grass' [konyér$\beta$a]

l. un huevo
'an egg' [unwé$\beta$o]

m. anhelo
'strong desire' [anélo]

n. inolvidable
'unforgettable' [inol$\beta$i$\delta$á$\beta$le]

o. inacción
'inaction' [inaksyón]

p. un ojo
'an eye' [unóho]

| | | |
|---|---|---|
| q. | analizar<br>'to analize' | [aŋalisár] |
| r. | pan<br>'bread' | [páŋ] |
| s. | panes<br>'breads' | [páŋeh] ~ [páneh] |
| t. | montón<br>'pile' | [moŋtóŋ] |
| u. | moṅtonés<br>'piles' | [moŋtóŋeh] ~ [moŋtóneh] |

In comparing the data from ESH shown in (49) with those shown in (50) from MCS, the following comparisons are noted:

1. In both MCS and ESH, the velar nasal occurs before dental, alveolar, palato-alveolar, and velar obstruents (items 50c, d, e, f, g, h, i, j) as well as in utterance-final position (items 50r and t).

2. In ESH, a coarticulated velar-bilabial nasal occurs before bilabial obstruents, while in MCS rapid speech, a velar nasal normally occurs (item 50a).

3. In ESH, a coarticulated velar-labio-dental nasal occurs before labio-dental obstruents, while in MCS a velar nasal normally occurs (item 50b).

4. In MCS, a velar nasal normally occurs before [y] and [w] (items 50i and j).[30] No data is given as to these environments in Guitart (1973) for ESH. One assumes from the text that a velar nasal would not occur in these environments in ESH.

5. In ESH, when a [+syllabic] segment follows a nasal, the nasal appears as it does in its underlying form, i.e., as alveolar [n]; in MCS, however, any nasal, followed by a morpheme boundary and a [+syllabic] segment, i.e., /____+[+syl], may appear as velar.

a. In item (50m), although synchronically the velar is followed by a vowel, it was at one time in the development of Spanish, followed by a glottal obstruent [h], i.e., [anhélo]. Thus, this argument could be used against a statement that [n] occurs before a vowel in this lexical item .

b. Items (50n) and (o) contain a prefix in-, in which the /n/ appears as velar [ŋ]. It might be explained that the prefix boundary in these items causes velarization of the nasal segment, i.e., inolvidatle and inacción are derived from /in=olvidable/ and /in=aksione/ respectively.

c. Item (50p) contains a word-boundary, i.e., /un#oho/. As opposed to ESH, any nasal followed by a word-boundary normally appears as a velar in MCS.

d. Items (50q), (s), and (u) all contain a velar nasal, followed by a [+syllabic] segment, without any type of intervening boundary, being derived from /analisare/, /panes/, and /montones/ respectively. Although not exclusive in this environment, the velar nasal does frequently occur.

The presence of the velar nasal in analizar might be explained by some type of analogical process, whereby an- might be regarded as a prefix, such as in-, such as previously seen in inacción or in a lexical item such as innato 'innate' (i.e., /in=nato/. This type of explanation based on analogy seems at best rather simplistic, but it will be, no doubt, offered by some as an explanation for the velar nasal in lexical items such as analizar.

In the case of panes and montones, a probable explanation for the presence of the velar nasal in these items is that in the singular,

this nasal occurs in word-final position, a more natural environment for the occurrence of the velar nasal in MCS. It is therefore conceivable that these items are based on the singular surface forms.

Comparing the data involving the occurrence of the velar nasal in ESH and MCS, it is obvious that this phenomenon is much wider spread in MCS.

In both MCS and ESH, we have nasal assimilation occurring before velar segments, failure of nasal assimilation before labials, dentals, palato-alveolars, and palatals and what is more disconcerting, dissimilation before alveolar segments.[31]

The above situation regarding assimilation, lack of assimilation, and dissimilation, is true only if we consider the underlying nasals of ESH and MCS to be /m ñ n/, as is traditionally assumed.

The question then arises as to the correctness of this claim regarding the systematic nasal phonemes of ESH and MCS. Is there more motivation for positing these underlying nasals as /m ñ n/, rather than /m ñ ŋ/?

The following discussion of the underlying nasal phonemes deals only with MCS, and not ESH, because of my unfamiliarity with the latter dialect.

By positing the systematic nasal phonemes of MCS as /m ñ ŋ/, rather than /m ñ n/, the data in (50) can be more easily explained: the underlying nasal in all items in (50) is /ŋ/; there is no rule of nasal assimilation in MCS rapid speech, with all nasals occurring in all non-syllable-initial environments appearing as [ŋ]; all word-initial occurrences of /ŋ/ appear phonetically as [n].

By positing /ŋ/, rather than /n/ as an underlying form in MCS, we avoid the rather complicated explanation concerning nasal assimilation in this dialect, and we furthermore are no longer left with the strange phenomenon of dissimilation occurring before alveolars, i.e., /preŋsa/ → [préŋsa], /oŋse/ → [óŋse], /uŋ#señor/ → [uŋseñór]; /uŋlado/ → [uŋláɸo]; /uŋñabo/ → [uŋñáβo].

By positing the systematic nasal phonemes as /m ñ ŋ/, the overall effect in terms of phonological rules on the grammar of MCS is the loss of one complicated rule of nasal assimilation, and the addition of a more simple rule of nasal alveolarization in syllable-initial position, which appears as follows:

(51) /ŋ/ → [n] / $____

Rule (51) applied to lexical items such as nudo, negro, nivel, gives the following derivations:

| (52) | nudo | negro | nivel | |
|---|---|---|---|---|
| | /ŋudo/ | /ŋegro/ | /ŋibele/ | underlying form |
| | /ŋúdo/ | /ŋégro/ | /ŋibéle/ | stress |
| | /núdo/ | /négro/ | /nibéle/ | Rule (51) |
| | /núɸo/ | /négro/ | /niβéle/ | spirantization |
| | | | /niβél/ | final e apocope |
| | [núɸo] | [négro] | [niβél] | surface form |

It appears, then, that the above approach, with underlying nasal phonemes /m ñ ŋ/ and Rule (51) will handle the data in (50) in a very straightforward manner. If the data in (50) were the only possible surface forms in MCS, then an approach using the systematic nasal phonemes /m ñ ŋ/ and a rule of nasal alveolarization would appear to

be more highly motivated than one using underlying /m ñ n/ and a rule of nasal assimilation, for MCS.

Unfortunately, there are a good many problems for either approach, considering the current phonological processes of MCS concerning the velar and alveolar nasal.

One problem with positing /m ñ ŋ/ as the underlying representation of nasals in MCS, rather than /m ñ n/, is that the former system is typologically anomalous, since /m ñ ŋ/ are all universally marked nasals (in varying degrees), and the universally unmarked nasal /n/ is absent from such a system. In terms of language universals, assuming that marking theory is correct, a system of underlying nasals such as /m ñ ŋ/ is difficult to justify. Marking conventions and language universals, however, do not represent absolutes, but rather tendencies, i.e., a system of underlying nasals such as /m ñ ŋ/ is only unusual, i.e., unnatural or highly marked, but not impossible.

Another problem with the suggested alternate analysis in this study is that a phonological rule such as /ŋ/ → [n] / $____ is optional in rapid speech and obligatory in other speech speeds (see the data previously given in section 3.3 of the present study); since [n] must surface in slower rates of speech, one might argue that this suggests that the underlying representation should be /n/. If, however, one considers rapid speech as normal, and slower speech or rates of speech as affected, which in essence they really are, then the overwhelming percentage of occurrence of [ŋ] in most rapid speech environments suggests that the velar nasal, at least in normal, i.e., rapid, speech is more basic in MCS.

Another difficulty concerned with the notion of /ŋ/ rather than /n/ as a systematic phoneme of MCS is that /ŋ/ is not a freely occurring

phoneme, while /n/ is, i.e., /n/ occurs, or at least may occur, in all phonological environments when one considers all rates of speech, while /n/ does not freely occur in syllable-initial environments.

The items in (50) in MCS rapid speech may frequently appear as shown. However, they may also optionally appear, although less frequently, as in standard Spanish, with the nasal assimilating to the following obstruent. Another possibility in MCS is for the nasals to occur as a coarticulation involving a velar-bilabial nasal (item 50a), a velar-labio-dental nasal (item 50b), a velar-dental nasal (item 50c), or a velar-alveolar nasal (items 50d, e, f, g, and h). These coarticulated nasals occur more frequently than does the above mentioned nasal assimilation of the standard language, but less frequently than those forms shown in (50). Finally, a word-final nasal may be optionally deleted, with nasalization of the preceding vowel occurring (items 50r and t). In the latter case, the following two rules are involved:

(53) Nasalization (obligatory)

$$V \rightarrow \tilde{V} \; / \; ____ [+\text{nasal}]$$

(54) Nasal deletion (optional)

$$[+\text{nasal}] \rightarrow [\emptyset] \; / \; \tilde{V} \; ____ \#$$

Rule (53) is, as indicated, obligatory, and is in fact a physiologically motivated, natural process, probably found in all natural languages. The precise degree of this nasalization depends on the individual language (see Saciuk, 1970, pp. 200-201).

By applying rules (53) and (54), the following derivations apply to items (50r) and (t):

| (55) pan | montón | |
|---|---|---|
| /paŋe/ | /moŋtoŋe/ | underlying form |
| páŋe | moŋtóŋe | stress |
| páŋ | moŋtóŋ | final e apocope |
| /pã̀ŋ/ | /mõ̀ŋtõ̀ŋ/ | vowel nasalization (53) |
| /pã̀/ | /mõ̀ŋtõ̀/ | nasal deletion (54) |
| [pã̀] | [mõ̀ŋtõ̀] | surface form |

At the present time in MCS, there is no immediately obvious way to account for the sruface manifestations of the velar nasal. Although a process such as:

(56) /n/ → [ŋ]

is almost context free, in that [ŋ] may optionally appear in any phonological environment, including syllable-initial (see data from section 3.3 of the present study), though far less frequently than in other phonological environments. Either a system using systematic /m ñ ŋ/ and an optional phonological rule of syllable-initial nasal alveolarization, or a system using underlying /m ñ n/ and an optional phonological rule of velar nasalization, is wrought with problems when attempting to deal with the occurrence of the velar nasal in MCS in any linguistically significant way.

What is perhaps more important about the current situation involving velar and alveolar nasals in MCS is that the generalization of [ŋ] to environments formerly occupied by [n] is clearly moving in the direction of [ŋ], i.e., the environments of [ŋ] are becoming more generalized, while the converse is not true. If this trend continues in its present direction, whereby the surface forms shown in (50) become no longer optional, but obligatory, eventually not permitting the

alveolar nasal in any environment in MCS except syllable-initial, then the proposed approach outlined above, i.e., positing /m ñ ŋ/ as the systematic nasal phonemes of MCS, and a rule changing /ŋ/ to [n] in syllable-initial position, would appear to be more highly motivated. In terms of the current situation in MCS rapid speech involving the status of /n/, /ŋ/, [n], [ŋ], [$^{m}_{ŋ}$], [$^{ɱ}_{ŋ}$], [$^{n}_{ŋ}$], and [$^{n̪}_{ŋ}$], it is, at best, difficult to determine which of the two approaches discussed in this section is more highly motivated. When, and if, the current situation in MCS involving the surface manifestations of nasals stabilizes, perhaps in another generation, it will then be possible to determine which approach is more highly motivated. If the current trend does continue, however, the approach using underlying /m ñ ŋ/ and a rule of syllable-initial alveolarization, would turn out to be more highly motivated, at least in terms of rule economy and concreteness of phonological rules.

The alternate analysis of positing the systematic nasals of MCS as /m ñ ŋ/, and a phonological rule of syllable-initial nasal alveolarization is offered only as a possible, but less than highly satisfactory alternative to the difficulties involved with the traditional analysis of the underlying nasal system of /m ñ n/, with an accompanying rule of nasal velarization. The failure of either system to be well motivated or explanatory for MCS is most likely a consequence of a weakness in our approach to accounting for the nasals of this dialect, or that the nasals of MCS merely involve a rather rare, unusual, and highly-marked system.

4.8 Word-boundary Phenomena

In many languages of the world, there is some type of phonological device present to acoustically signal word-boundaries, e.g., English

terminal junctures or the glottal stop in word-initial environments before a vowel.

In other languages, a phonological device, such as liaison versus non-liaison (i.e., linking across word-boundaries--see Schane, 1968), may be present to signal different syntactic relationships, c.f. French, NP verb Charles arrive versus clitic verb, elles arrivent. In NP + verb relationship, liaison, as between Charles and arrive is prohibited, while in clitic + verb relationships, as between elles and arrivent it is obligatory (Anderson, 1975). French also uses the word-boundary phenomenon of liaison to acoustically signal noun adjective relationship, e.g., un savant anglais, 'an English scientist,' in which liaison is prohibited between savant and anglais, and to acoustically signal adjective + noun relationships, e.g., un savant anglais 'a wise Englishman,' in which liaison is obligatory.[32]

Standard Spanish, however, contains no such device to signal word boundaries.

In some Spanish dialects, nevertheless, certain phonological changes occur in word-final position that may potentially be interpreted as being present to signal word-boundaries.

In the Spanish of Asunción, Paraguay, Tessen (1974, p. 936; discussed in section 2.4.9 of the present study) reported that the glottal stop is present "frequently to indicate word boundaries."

The presence of [ʔ] in word-final position in MCS may at times be observed, and may likewise be interpreted as indicating a morpheme-boundary of a word-boundary.

Although the presence of the glottal stop in the Spanish of Asunción may well be an influence of Guaraní, and [ʔ] in word-final

position in MCS may be due to English influence, this phonological device, nevertheless, may be serving to delineate word-boundaries.

Tessen (1974) also reports that the systematic nasal /n/, in utterance-final position, is always realized as bilabial [m]. Utterance-final position being a more restricted case of a word-boundary occurrence, the realization of [m] for systematic /n/ may also be interpreted as an acoustic device serving to delineate word-boundaries.

Although in standard Spanish, the only nasal that may appear phonetically in word-final position is alveolar [n], in MCS, the only normal rapid speech surface manifestation of a word-final nasal is [ŋ].

It has often been reported that in Cuban Spanish, the following items constitute a minimal pair, being distinguished only by the presence or absence of the word-final velar nasal:

(57)

| | Standard Spanish | Cuban Spanish |
|---|---|---|
| enaguas 'petticoat' | [enáǵwas] | [enáǵwah] |
| en aguas 'in waters' | [enáǵwas] | [eŋáǵwah] |

If these data are correct, or at least accurately reflected Cuban pronunciation when they were first reported, then there can be no question that [ŋ] in word-final position, is or was serving to signal word-boundaries.

The above situation, however, does not reflect the current distribution of [ŋ] in MCS. Compare the following:

(58)

| | MCS |
|---|---|
| enaguas | [eŋáǵwah] ~ [enáǵwah] |
| en aguas | [eŋáǵwah] |

While [enáǵwah] can only mean 'petticoat,' in MCS rapid speech, [eŋáǵwah] can mean either 'petticoat' or 'in waters.' Although [ŋ] in

MCS rapid speech manifests itself differently than in the data shown in (57) for Cuban Spanish, the presence or absence of the velar nasal still serves as a boundary phenomenon in MCS, i.e., the lack of [ŋ] in rapid speech serves to indicate that there is no word-boundary present.

It has also been reported for Cuban Spanish that word-final nasals nasalize the preceding vowel, and that the nasal consonant may then become deleted (Bartoš, 1965), e.g.:

(59) malecón 'pier'

| | |
|---|---|
| /malekone/ | underlying form |
| malekóne | stress |
| malekón | final e apocope |
| malekṍn | V → Ṽ / ____ N / # (obligatory) |
| malekṍ | /N/ → [ø] / V____# (optional) |
| [malekṍ] | surface form |

Nasalized vowels, when they are reported in word-final position may also be interpreted as a word-boundary phenomenon.

It has likewise been reported (Resnick, 1975; Flórez, 1963; Albor, 1971; Canfield, 1962; Toscano Mateus, 1953; Canfield, 1967) that in some areas of Ecuador and Colombia that word-final /s/ before vowels becomes voiced. These dialects of Ecuador and Colombia would therefore contain the following phonological rule:

(60) /s/ → [z] /____#V

Compare the following surface forms from the Spanish of these dialects:

(61) a. los ojos [lozóhos]

b. oso [óso]

c. estas aguas [estazágwas]

d. mesa [mésa][33]

It is clear that in these dialects of Ecuador, the voicing of /s/ is another instance of an acoustic signal serving to demarcate word-boundaries.

In this section, various data have been presented from several Spanish dialects, including MCS, to illustrate several different phonological methods which serve to indicate word-boundaries in Spanish.[34]

As standard Spanish has no device to acoustically signal word-boundaries, and all the examples of word-boundaries cited are fairly recent innovation in American Spanish, it appears that we may be observing a phonological change in process, and this change appears to be in the direction of word-boundary identification.

The question then arises whether the identification of word-boundaries in a language is a more natural, hence less-marked, process, than not signaling word-boundaries.

From a point of view of articulation, the phonological identification of word-boundaries is obviously more-marked than not identifying these boundaries in those languages which effect an additional phonological rule in the process of boundary identification, e.g., the Spanish of Asunción contains the additional rule /N/ → [m] /____##, to mark utterance-final word-boundaries.

From a point of view of perception, however, languages which acoustically signal the presence of word-boundaries are less-marked, as the presence of such word-boundaries results in greater perceptual ease.

In terms of the concept of "relative markedness" discussed in Guitart (1973), if the need for word-boundary identification to

facilitate perceptual clarity is greater than the extra effort required in the articulatory process required to delineate word-boundaries, then the phonological identification of such word-boundaries could be considered to be "less-marked" than their non-identification.

Also, if word-boundary identification is to be considered a universal linguistic tendency, found in many different levels of speech, as many of the world's languages do phonologically mark word-boundaries, e.g., French (examples previously given in this section); devoicing of word-final obstruents in German and Russian; voicing of word-final obstruents in Welsh (Griffin, 1975), then those dialects of Spanish discussed in this section are, or at least appear to be moving in the direction of a universal tendency.

Although the "universal" status of word-boundary identification is questionable, the data presented in this section clearly indicate that in many dialects of Spanish, there is a definite observable tendency in the direction of word-boundary identification.

One curious thing about these word-boundary phenomena, however, is that, although in Spanish they tend to occur in rapid speech, i.e., these Spanish dialects tend to signal word-boundaries in rapid speech; in many other languages, the tendency is just the opposite in rapid speech, i.e., the tendency is to delete word-boundary signals in rapid speech, e.g., in German the glottal stop before word-initial vowels tends to be deleted in rapid speech; also in rapid French, there is a tendency not to apply liaison.

## 4.9 Linguistic Change--Sound Change and Spread

The phenomenon of sound change in a given phonological environment and its eventual spread to other environments is a fairly common

process in the historical development of many languages, e.g., King (1969); Stockwell and MacCauley (1972). Likewise, the phenomenon of a sound change occurring in one or more dialects, and the eventual spread of this change to other dialects is a common process.

When comparing synchronic phonological processes of MCS with published phonological descriptions of other Spanish dialects, particularly with Cuban Spanish, several of these sound changes can be observed as already having spread to other environments, and their eventual spread to additional environments appears likely.

Furthermore, recent sound changes which have occurred in some Spanish dialects can be observed in the process of spreading to other dialects, including MCS.

4.9.1 The Velar Nasal

In two published phonological descriptions of Cuban Spanish (Lamb, 1968 and Isbaşescu, 1968a) the sound change /n/ → [ŋ] was described as taking place in word-final position only. In more recent publications (Guitart, 1973 and Sosa, 1974) this same sound change is described as having spread to other environments.[35]

It is apparent from the available published phonological descriptions of Cuban Spanish that at one time the sound change /n/ → [ŋ] may have been limited to word-final environments, if we are to believe these data. It is likewise apparent that this particular sound change has spread, and is no longer limited to word-final position.

It is logical to assume that speakers of MCS, since the great majority have arrived from Cuba since 1959, at one time also had the sound change /n/ → [ŋ] limited to word-final position.

In the Spanish spoken today in the Miami, Florida area, this sound change has spread to all other non-syllable-initial environments, and may, in fact, even occur in syllable-initial position, within a word, but with much less frequency. Compare the following phonetic forms currently observable in MCS:

(62) a. un gato 'a cat' [uŋgáto]

b. un caso 'a case' [uŋkáso]

c. un beso 'a kiss' [uŋbéso]

d. un poco 'a little' [uŋpóko]

e. énfasis 'emphasis' [énfasih]

f. un toro 'a bull' [uŋtóro]

g. un dedo 'a finger' [uŋdéɗo]

h. un chancho 'a hog' [uŋčáŋčo]

i. un rabo 'a tail' [uŋřaɓo]

j. un son 'a sound' [uŋsóŋ]

k. un lado 'a side' [uŋláɗo]

l. un ñame 'a yam' [uŋñáme]

m. antes 'before' [áŋtes]

n. anterior 'front' [aŋteryór]

o. anhelo 'strong desire' [aŋélo]

p. once 'eleven' [óŋse]

q. prensa 'press' [préŋsa]

r. enaguas 'in waters' [eŋágwah]

s. inolvidable 'unforgetable' [iŋolɓiɗáɓle]

t. nido 'nest' [niɗo]

Because of the general vowel nasalization rule before nasal consonants, items (a) through (t) will all contain some degree of vowel

nasalization. This phonetic vowel nasalization becomes more significant if a later rule of nasal consonant deletion applies (see item (59) of this chapter).

The data in (62) are somewhat surprising, in terms of the normally strong process of nasal assimilation found in standard Spanish, in which nasals become homorganic to a following obstruent. This rule of standard Spanish nasal assimilation is shown below:

(63)

$$[+\text{nasal}] \quad \begin{bmatrix} \alpha\text{cor} \\ \beta\text{ant} \\ \gamma\text{back} \\ \delta\text{distr} \\ \varepsilon\text{high} \end{bmatrix} \quad / ____(\#) \quad \begin{bmatrix} \text{-syll} \\ \alpha\text{cor} \\ \beta\text{ant} \\ \gamma\text{back} \\ \delta\text{distr} \\ \varepsilon\text{high} \end{bmatrix}$$

As expressed by the above rule, the lexical items shown in (62) would appear as follows in standard Spanish:

(64) a. un gato 'a cat' [uŋgáto]

b. un caso 'a case' [uŋkáso]

c. un beso 'a kiss' [umbéso]

d. un poco 'a little' [umpóko]

e. énfasis 'emphasis' [éɱfasis]

f. un toro 'a bull' [uɳtóro]

g. un dedo 'a finger' [uɳdéðo]

h. un chancho 'a hog' [uɲčáɲčo]

i. un rabo 'a tail' [umr̃áβo]

j. un son ' a sound' [unsón]

k. un lado 'a side' [unláðo]

l. un ñame 'a yam' [uɲ̃ɲ̃áme]

m. antes 'before' [ántes]

n. anterior 'front' [anteryór]

o. anhelo 'strong desire' [anélo]

p. once 'eleven' [ónse]

q. prensa 'press' [prénsa]

r. en aguas 'in waters' [enágwas]

s. inolvidable 'unforgetable' [inolβiðáβle]

t. nido 'nest' [níðo][36]

In comparing the data from MCS shown in (62) with those shown in (64), the following observations are noted:

1. In items (a) and (b), where a nasal is followed by a velar obstruent, both the surface manifestations of MCS and standard Spanish contain the velar nasal.

2. In comparing the phonetic representations of items (64c) through (64h), and in (64l), (m), and (n), we see that in standard Spanish, in each case, the nasal assimilates to the following obstruent, but in MCS assimilation fails to occur, and all such nasals appear as [ŋ] in rapid speech.[37]

The fact that nasal assimilation normally fails to take place in items (64c) through (h) and in (64l, (m), and (n) in MCS rapid speech is somewhat surprising. Even more interesting, however, is what occurs in items (64i), (j), (k), (p), and (q) in MCS. In these items, a nasal occurs before an alveolar obstruent. Since, in standard Spanish, systematic /n/ is alveolar, no change in point of articulation need take place when the following segment is alveolar, i.e., systematic /n/ and [r s l] already agree in the features [+coronal], [+anterior], [-back], and [+distributed]. In the case of MCS rapid speech, however,

if the underlying nasal in items (i), (j), (k), (p), and (q) is to be considered alveolar, then, as also previously reported in many other studies done on Cuban Spanish phonology, dissimilation[38] actually occurs, wherein systematic alveolar /n/, when followed by an alveolar segment, actually dissimilates, and becomes [ŋ]. Recall from sections 3.3 and 4.7 that the fact that systematic alveolar /n/ "dissimilates" to [ŋ] when followed by an alveolar segment was one of the arguments used against the consideration of alveolar /n/ as an underlying nasal in MCS.

3. In item (t), where a nasal occurs in word-initial position, this nasal appears as alveolar in both standard Spanish and MCS, since as stated above, in MCS the only environment in which [ŋ] fails to appear is word-initial.[39]

4. In items (o), (r), and (s), a nasal segment is followed by a [+syllabic] segment. Recall from standard Spanish, that nasal assimilation occurs only before a following obstruent. Hence, in standard Spanish, in items (o), (r), and (s), nasal assimilation fails to occur, and the nasal in these items appears as systematic alveolar /n/.

In MCS rapid speech, however, if the underlying nasal for items (o), (r), and (s) is considered to be alveolar, rather than velar, then the fact that alveolar /n/ appears phonetically as a velar nasal when followed by a [+syllabic] segment must somehow be accounted for. A suitable motivated explanation for this phenomenon is not immediately obvious.

The data presented in this section have indicated that the occurrence of the velar nasal [ŋ] was perhaps initially limited to word-final environments in MCS, and that in current MCS rapid speech,

this phonological change of /n/ → [ŋ] has spread, and may now appear in all other environments except syllable-initial, as mentioned above. What we might be witnessing here, is a rather rapid spread of a sound change, occurring in a relatively short period of time, from a very specific to a very general environment.

4.9.2 Voicing of Intervocalic Stops

The lenition of /k/ in intervocalic environments in Cuban Spanish was reported in Isbaşescu (1968a). This same phonological change occurs in the data found in Lamb (1968).

Saciuk (1974), however, reports a more general process of lenition occurring in the rapid speech of speakers of MCS originating from the province of La Habana. This phonological change involved the lenition of all voiceless stops in intervocalic environments:

(65) $$\begin{bmatrix} -son \\ -cont \\ -del\ rel \end{bmatrix} \rightarrow [+voice] \,/\, V____V$$

These data may be indicative of another case of a sound change, initially limited to the specific case of /k/ → [ɣ], having spread to a more general change, involving all voiceless intervocalic stops in Spanish. Again, we may be witnessing a sound change and spread occurring over a very short period of time.[40]

According to Saciuk (1974), and the data in section 3.4 of this study, this lenition of intervocalic voiceless stops seems to be generally limited only to speakers of MCS from the province of La Habana. It would be interesting to see if this sound change spreads, in the near future, e.g., ten years, to other speakers of MCS from the remaining five provinces of Cuba. Actually, the data from

section 3.4 of this study contained in Table XX show that this sound change occurred in the speech of speakers from the provinces of Las Villas (7.0%) and Camaguey (2.6%). These data would tend to indicate that such a spread of this sound change is already in progress in MCS rapid speech.

This process of /p t k/ → [β̞ ð̞ ɣ̞] in intervocalic environments may be part of a more general weakening tendency present in many languages, including Spanish, in that spirants are generally considered to be "weaker," in terms of a weakening chain, than voiceless plosives, cf. Hooper (1973).

### 4.9.3 Spirantization and Systematic Phonemic Representation of Voiced Obstruents in MCS

According to all standard manuals of Spanish pronunciation, the voiced stops /b d g/ become spirantized in all environments except after a pause or after a nasal, with /d/ also failing to spirantize after /l/. There is a great deal of independent evidence that motivated the inclusion of a rule of spirantization in many dialects of Spanish. Such a rule would appear as follows:[41]

(66) $$\begin{bmatrix} b \\ \langle d \rangle \\ g \end{bmatrix} \rightarrow [+\text{cont}] \text{ except } / \left\{ \begin{matrix} \#\# \\ [+\text{nasal}] \\ \langle /l/ \rangle \end{matrix} \right\} ____$$

It has been reported, however, in many phonological studies of Cuban Spanish (e.g., Bartoš, 1966 and 1970; Isbaşescu, 1968a, and 1968b; Sosa, 1974) that the [±continuant] surface manifestations of /b d g/ occur not as shown in rule (66) above, but rather in free-variation in all rapid speech environments.[42]

Likewise, in MCS rapid speech, the [±continuant] surface variants of /b d g/ also occur in free-variation after a pause, after a nasal, and after /l/ in the case of /d/. Elsewhere, as in standard Spanish, only the [+continuant] variants normally occur. In regard to Cuban Spanish, however, Bartoš (1966, p. 98) reports that [b] occurs in the environment of / V____V and also in the environment /____yV.

Consider the following data from MCS rapid speech:

(67) a. bobo [bó̞βo] ~ [β̞óβo]

b. el bobo [elβ̞óβo]

c. un bobo [unbó̞βo] ~ [unβ̞óβo] ~ [ũβ̞óβo]

d. dedo [dé̞ðo] ~ [ðé̞ðo]

e. el dedo [eld̪é̞ðo] ~ [eld̪ðé̞ðo]

f. un dedo [undé̞ðo] ~ [unðé̞ðo] ~ [ũðé̞ðo]

g. gago [gá̞go] ~ [ɣá̞go]

h. el gago [elɣá̞go]

i. un gago [ungá̞go] ~ [unɣá̞go] ~ [ũgá̞go]

j. Beatriz babea [beatríβ̞aβ̞éa] ~ [β̞eatríβ̞aβ̞éa]

k. Diego duda [dyé̞go̞ðú̞da] ~ [ðyé̞go̞ðú̞da]

l. Guillermo gasta [giyérmo̞gá̞sta] ~ [ɣiyérmo̞gá̞sta][43]

From the above data, it is apparent that in both Cuban Spanish and MCS a sound change is occurring involving the phonetic distribution of /b d g/, particularly after a pause, after a nasal, and after /l/ in the case of /d/. It will be interesting to see if in the future this change will spread in MCS, perhaps completely eliminating the appearance of the [-continuant] phonetic manifestations of /b d g/.

Although the occurrence of [β̞ ð̞ ɣ̞] after a pause, after a nasal, and after /l/ in the case of /d/ has not been widely reported in

published form in other dialects of Spanish, I have observed this phenomenon in Puerto Rican and Dominican Spanish. It seems very likely that this sound change is spreading to other Spanish dialects.[44]

It appears that the above sound change is occurring largely in the direction of spirantization, and not in the reverse direction. This brings up the question of the appropriateness of a rule of spirantization in MCS rapid speech.

Within generative phonology, it has heretofore been assumed, since Harris' Spanish Phonology, that the phonological grammar of Spanish contains a rule of spirantization, shown in (66).

In formulating such a rule of spirantization, Harris states: "Let us assume, perhaps incorrectly, that the directionality of the alternations [b-β], [d-ð], [g-ɣ] is from stop to continuant." Harris goes on to formulate such a rule of spirantization without any further motivation for the above assumption.

Explicit in such an assumption, however, is that the systematic phonemic representations of the voiced obstruents of Spanish are [-continuant] /b d g/, rather than [+continuant] /β ð ɣ/.

It has been observed, however, that in several Spanish dialects, including Miami-Cuban Spanish the [+continuant] surface variants of systematic /b d g/ occur in all phonological environments in rapid speech, and are not excluded after pauses, after nasals, and after /l/ in the case of /d/. The data from MCS were shown above in (67).

While the [+continuant] surface variants of systematic /b d g/ may occur in all phonological environments in MCS rapid speech, i.e., the occurrences of [+continuant] [β ð ɣ] have spread to a more general environment, the converse is not true. That is, the [-continuant]

surface variants are not observed in MCS rapid speech in any environment in which a preceding segment is [+continuant].

It is apparent, therefore, that we are observing a phonological change in MCS involving voiced obstruents, and that this change is clearly in the direction of continuancy, i.e., the phonological environments in which the [+continuant] surface variants of systematic /b d g/ occur are increasing, or becoming more generalized.

With these data in mind, the question arises as to the correctness of positing the systematic phonemes for the voiced obstruents in the synchronic grammar of MCS as [-continuant], rather than [+continuant] /β ð ɣ/. Closely related to this question is what independent motivation there is for claiming that the phonological component of MCS should contain a rule of spirantization, rather than one of despirantization, optionally converting [+continuant] systematic /β ð ɣ/ to [-continuant] [b d g] in specified environments.

4.9.3.1 Arguments in Favor of [-continuant] Systematic Phonemes for Voiced Obstruents in the Synchronic Grammar of MCS

1. Symmetry of the underlying system of obstruents in MCS: Shown below in (68) is the system of underlying obstruents for MCS containing [-continuant] voiced obstruents:

(68) Systematic obstruent phonemes: (with [-continuant] voiced obstruents)

| [-voice] | [+voice] |
|---|---|
| /p/ | /b/ |
| /t/ | /d/ |
| /k/ | /g/ |
| /f/ | |
| /s/ | |
| /h/ | |
| /c/ | |

This same system containing voiced obstruents which are [+continuant] is shown below in (69):

(69) Systematic obstruent phonemes: (with [+continuant] voiced obstruents)

| [-continuant] | | [+continuant] | |
|---|---|---|---|
| [-voice] | [+voice] | [-voice] | [+voice] |
| /p/ | | | /b/ |
| /t/ | | | /d/ |
| /k/ | | | /g/ |
| /c/ | | | |
| | | /f/ | |
| | | /s/ | |
| | | /h/ | |

The system of underlying obstruents shown above in (68) is, in some ways, more symmetrical than the system shown in (69). Another argument in favor of the underlying system shown in (68) is that the six phonemes in question differ by only one feature, [voice], while in the system shown in (69), they differ by two features, [voice] and [continuant]. Therefore, the symmetry of the system of underlying phonemes for obstruents serves to motivate the [-continuant] status of /b d g/ for MCS. Although such an argument by itself is not extremely compelling, it does provide some motivation for the [-continuant] status of systematic /b d g/ in this dialect.

2. Markedness of underlying voiced obstruents in MCS: According to the theory of markedness as outlined by Chomsky and Halle (1968), UIC XXIV, the unmarked specification for continuancy in consonants is [-continuant], unless this segment is followed by any other [+consonantal] segment, and is preceded by a morpheme boundary. In this environment, its unmarked value is [+continuant]. UIC XXIV is shown below in (70):

(70) UIC XXIV:

$$[\text{u cont}] \rightarrow \begin{cases} [+\text{cont}] \,/\, \underline{\quad} \,[+\text{cons}] & \text{a.} \\ [-\text{cont}] & \text{b.} \end{cases}$$

If UIC XXIV is correct, and there are many reasons to suspect that it is not, at least for Spanish and English, then a system of underlying voiced obstruents in MCS being [-continuant] would be less marked than one containing [+continuant] voiced obstruents. Therefore, the SPE theory of markedness would provide further motivation for voiced obstruents being [-continuant] in underlying forms. Just how compelling this argument is, however, depends on the correctness of UIC XXIV.

For English, part (a) of UIC XXIV deals specifically with such lexical items as spin; stop; skin; floor; from; etc., suggesting the fact that clusters such as /sp/, /st/, /sk/, /fl/, and /fr/ are less highly marked than clusters in which /p t k l r/ are preceded by a [-continuant] consonant. Some such clusters would, of course, violate surface structure constraints on initial syllables in English. Unfortunately, part (a) of UIC XXIV makes several improper claims about English phonology. In English, the morpheme-initial clusters /pl/, /pr/, /bl/, /br/, /tr/, /dr/, /gl/, and /gr/ are very frequent. On the other hand, the sequence /sr/ does not occur word-initially in standard English. Because of the high frequency of occurrence of clusters such as those just mentioned above, it would appear, at least for English, that part (a) of UIC XXIV is simply incorrectly stated.[45]

Also, some good arguments from language change and rules of natural languages can be found to show that it is natural for obstruents to be [+voice; +cont] between vowels or between [+continuant]

segments. A similar process can be found in Avestan, the Prince of Wales dialect of Eskimo, some Celtic languages, and a number of Turkic-Mongol languages (D. Gary Miller, personal communication).

When considering the possible morpheme-initial clusters of Spanish, part (a) of UIC XXIV must again be regarded with skepticism. While it accurately reflects the fact that [+continuant] obstruents are less highly marked than [-continuant] obstruents in the environment of /+ _____ [ consonantal], it does so for the wrong reasons.

The sequences /pl/, /pr/, /tr/, /kl/, /kr/, /bl/, /br/, /dr/, /gl/, /gr/, /fl/, and /fr/ frequently occur morpheme-initially in Spanish. However, whether the segments /p t k b d g f/ appear as [-continuant] has nothing to do with their being preceded by a morpheme boundary and followed by a [+consonantal] segment, as stated in the part (a) environment of UIC XXIV. /p t k/ are always [-continuant] in Spanish; /f/ is always [+continuant]; /b d g/ appear phonetically as [±continuant] depending on their phonological environment, but neither is sensitive to the environment shown in part (a) of UIC XXIV, but rather to a preceding [+continuant] segment. Examples of the above word-initial sequences are shown below in (71):

(71)

| | lexical item | underlying form | standard Spanish |
|---|---|---|---|
| a. | plaga | /+plaga/ | [pláɣa] |
| b. | la plaga | /+la+plaga/ | [lapláɣa] |
| c. | con plaga | /+kon+plaga/ | [kompláɣa] |
| d. | prado | /+prado/ | [práđo] |
| e. | el prado | /+el+prado/ | [elpráđo] |
| f. | un prado | /+un+prado/ | [umpráđo] |
| g. | trapo | /+trapo/ | [trápo] |

| | | | |
|---|---|---|---|
| h. | el trapo | /+el+trapo/ | [eltrápo] |
| i. | un trapo | /+un+trapo/ | [untrápo] |
| j. | clamor | /+klamore/ | [klamór] |
| k. | el clamor | /+el+klamore/ | [elklamór] |
| l. | un clamor | /+un+klamore/ | [unklamór] |
| m. | crema | /+krema/ | [kréma] |
| n. | la crema | /+la+krema/ | [lakréma] |
| o. | con crema | /+kon+krema/ | [konkréma] |
| p. | blanco | /+blanko/ | [blánko] |
| q. | el blanco | /+el+blanko/ | [elβlánko] |
| r. | un blanco | /+un+blanko/ | [umblánko] |
| s. | brisa | /+brisa/ | [brísa] |
| t. | la brisa | /+la+brisa/ | [laβrísa] |
| u. | con brisa | /+kon+brisa/ | [kombrísa] |
| v. | drama | /+drama/ | [dráma] |
| w. | el drama | /+el+drama/ | [eldráma] |
| x. | un drama | /+un+drama/ | [undráma] |
| y. | gloria | /+gloria/ | [glórya] |
| z. | la gloria | /+la+gloria/ | [laglórya] |
| aa. | con gloria | /+kon+gloria/ | [konglórya] |
| bb. | grande | /+grande/ | [gránde] |
| cc. | el grande | /+el+grande/ | [elgránde] |
| dd. | un grande | /+un+grande/ | [ungránde] |
| ee. | flama | /+flama/ | [fláma] |
| ff. | la flama | /+la+flama/ | [lafláma] |
| gg. | con flama | /+kon+flama/ | [konfláma] |
| hh. | fregar | /+fregare/ | [fregár] |

| | | |
|---|---|---|
| ii. <u>el fregar</u> | /+el+fregare/ | [elfregár] |
| jj. <u>un fregar</u> | /+un+fregare/ | [unfregár] |

The list of obstruents which may be followed by a [+consonantal] segment shown in (71) above is exhaustive for Spanish.[46]

While part (a) of UIC XXIV captures the significant fact of Spanish phonology that sequences such as those shown below in (72) do not occur, it fails in many other respects.

(72) $\left\{\begin{matrix} t, d \\ k, g \\ f, h \end{matrix}\right\}$ $\left\{\begin{matrix} [+\text{obstruent}] \\ [+\text{nasal}] \end{matrix}\right\}$

Environment (a) of UIC XXIV fails to capture an important aspect of Spanish phonology by claiming that sequences such as /pl/, /pr/, /tr/, /kl/, /kr/, are unnatural in Spanish when they follow a morpheme boundary, and that /bl/, /br/, /dr/, /gl/, and /gr/, when they occur as [+continuant] are more natural, and do so because they occur following a morpheme boundary and followed by a [+consonantal] segment. As was the case with English, it appears that the environments shown in UIC XXIV are once again incorrectly stated.

As was the case with the symmetry argument, an argument in favor of the systematic representations of the voiced obstruents of MCS as being [-continuant], based on the theory of markedness, is somewhat less than compelling, especially since it is apparent that UIC XXIV is incorrectly stated, at least for English and Spanish.

Any other arguments for claiming that the systematic phonemic representations for the voiced obstruents of MCS should be [-continuant] are not immediately obvious.

4.9.3.2 Arguments in Favor of [+continuant] Systematic Phonemes for Voiced Obstruents in the Synchronic Grammar of MCS

1. Comparing the surface forms of MCS, shown above in (67) with those of standard Spanish, shown in (71), it is obvious that the phonological change in process in MCS is clearly in the direction of continuancy. The directionality of this change suggests a restructuring of the synchronic underlying forms for these voiced obstruents, at least in MCS.

2. The most compelling argument in favor of restructuring the systematic phonemic representations of the voiced obstruents of MCS as [+continuant] rather than maintaining them as [-continuant] is based on frequency of occurrence and rule economy.

In MCS rapid speech, the [+continuant] surface variants of the voiced obstruents occur much more frequently than the [-continuant] phonetic forms. In terms of rule economy, therefore, it seems more logical that the systematic phonemes should be /β̸ ð̸ ɣ̸/, requiring no phonological rule to account for the more frequent [+continuant] surface variants, rather than the converse, requiring the phonological grammar to contain a rule converting the majority of instances of [-continuant] underlying /b d g/ to the [+continuant] surface variants. Not only will rule economy result if the underlying forms for the voiced obstruents are posited as [+continuant], but a less abstract underlying representation will also be achieved.

4.9.3.3 The Naturalness Argument--a Rule of Spirantization vs. a Rule of Despirantization

In a system of underlying forms for voiced obstruents in MCS which contains [-continuant] /b d g/, the phonological component of

the grammar must contain a rule of spirantization, as shown in (73).[47]

(73) $\begin{bmatrix} -son \\ +vcd \\ \langle +cor \rangle \end{bmatrix} \rightarrow [+cont] / \begin{bmatrix} +cont \\ \langle -lat \rangle \end{bmatrix} \quad (\#) ____$

If, on the other hand, the underlying system of voiced obstruents contained [+continuant] /β ð ɣ/, a rule of despirantization would be required, optionally converting [+continuant] /β ð ɣ/ to [-continuant] [b d g] when they are not preceded by a [+continuant] segment. The required rule of despirantization is shown below in (74):

(74) $\begin{bmatrix} +obs \\ +voice \end{bmatrix} \rightarrow [-cont] / \left\{ \langle \begin{bmatrix} -cont \\ -\alpha cor \end{bmatrix} \rangle \right\} \quad (\#) \quad \overline{[\langle \alpha cor \rangle}]$

In comparing the rules of spirantization and despirantization, it is clear that the rule of spirantization is more natural, hence a more highly valued rule.

The rule of spirantization is a highly natural rule of assimilation; the rule of despirantization, however, although still a rule of assimilation, must contain three environments. There seems to be no other way of describing the environments of despirantization in only two statements, unless one wishes to argue that a [-segment] is automatically minus all distinctive phonological features. The inescapable conclusion, therefore, must be that a rule of spirantization is more natural, and therefore, more highly valued than a rule of despirantization.

4.9.3.4 Summary and Conclusions--/BDG/ in MCS

Two less than compelling arguments have been offered in favor of maintaining the [-continuant] status of the voiced obstruents of standard Spanish in MCS, based on the symmetry of the underlying system

of obstruents, and on the notion of markedness as outlined in Chomsky and Halle (1968).

Two arguments have been offered in favor of the restructuring of the [-continuant] voiced obstruents of standard Spanish to [+continuant] in MCS, based on (1) the directionality of the phonological change taking place currently in MCS; and (2) frequency of occurrence, rule economy, and relative abstractness of underlying forms.

It has also been shown that a phonological rule of spirantization is more natural than one of despirantization.

While the set of arguments for or against the maintaining of the [-continuant] status of the voiced obstruents of standard Spanish in the synchronic grammar of MCS does not conclusively motivate either approach, it seems apparent that the arguments in favor of phonemic restructuring do not, at the present time, seem to be strong enough to conclusively motivate such a restructuring of underlying voiced obstruents in MCS.

In light of the fact that there appears to be no compelling evidence in favor of the maintaining of the [-continuant] status of the systematic phonemic representation of the voiced obstruents of MCS, or for a phonemic restructuring of these segments as [+continuant], one further argument must be considered. Such a phonemic restructuring would cause the phonological grammar of MCS to have a different inventory of underlying segments than other dialects of Spanish. To motivate such a complication of the grammar of Spanish would require stronger evidence than has been presented here.

It should be pointed out, however, that such a complication is not as serious as it might first appear, since the inventory of

underlying segments of MCS, and of other Spanish dialects, is already different from that of the "standard language." The underlying inventory of segments in standard Spanish, for example, contains the dorso-velar spirant /x/. MCS, however, along with several other Spanish dialects, includes no such segment in its inventory of underlying forms, but rather, the voiceless glottal spirant /h/.

Although it is beyond the scope of this study, it can easily be shown that such a difference of underlying forms is necessary. There is simply no synchronic justification for claiming that the underlying segment inventory of MCS should contain a voiceless dorso-velar spirant.

4.9.3.5 Epilogue--/BDG/ in MCS

From the data and arguments presented in this section, it is apparent that a series of minor arguments converge, providing perhaps slightly more compelling motivation to maintain the current [-continuant] status of voiced obstruents in the synchronic grammar of MCS, with an accompanying rule of spirantization in specific environments, rather than a phonemic restructuring of these segments as [+continuant], with a phonological rule of despirantization.

If, however, the trend toward continuancy continues in MCS, eventually eliminating all surface occurrences of [-continuant] [bdg] from the surface level, then a phonemic restructuring must obligatorily take place, making the underlying forms of the voiced obstruents [+continuant]. If such a phonemic restructuring were not to take place, the phonological grammar of MCS would be left with a rule of absolute neutralization, which would convert all occurrences of [-continuant] /bdg/ to [+continuant] surface forms in all environments.

Only time will tell, however, if such an obligatory phonemic restructuring of the voiced obstruents of MCS will take place.

4.9.4 Syllable-initial s Aspiration

The existence of a rule of syllable-final s-aspiration appears to be well motivated for MCS, Cuban Spanish, and for various other dialect areas, e.g., Puerto Rican, Dominican, Porteño and Andalusian dialects of Spanish. This rule, discussed previously in part 4.3 of the present study is shown again below for the reader's convenience:

(75) /s/ → [h] / ____$

The application of the above rule gives the following surface forms in these dialects:

(76) a. libros 'books' [líβroh]
b. casas 'houses' [kásah]
c. comes 'you eat' [kómeh]
d. busca 'he looks for' [búhka]
e. pastillas 'sideburns' [pahtíyah]
f. estudiar 'to study' [ehtuðyár]

While s-aspiration has heretofore been limited to syllable-final environments, this sound change is now in the process of spreading also to syllable-initial environments. The occurrence of aspirated s in syllable-initial position can be observed with frequency in speakers of Puerto Rican[48] and especially Dominican Spanish (Jiménez Sabater, 1975; p. 77; Henríquez Ureña, 1940), and may also be observed at times in the speech of some speakers of MCS.[49] Apparently, these speakers have the following optional rapid speech rule in their phonological grammar:

(77) /s/ → [h] / $____ (optional)

Consider the following surface forms observed in some speakers of Puerto Rican Spanish:

| (78) | Lexical item | Puerto Rican Spanish | Standard American Spanish |
|---|---|---|---|
| a. | sí 'yes' | [hí] | [sí] |
| b. | señor 'mister' | [heñór] | [señór] |
| c. | siempre 'always' | [hyémpre] | [syémpre] |
| d. | dice 'he says' | [díhe] | [díse] |
| e. | produce 'he produces' | [proðúhe] | [proðúse] |
| f. | traduce 'he translates' | [traðúhe] | [traðúse] |

These data suggest that the sound change involving s-aspiration in syllable-final position has spread to another, environment, i.e., syllable-initial, making the rule more general.[50]

Again, it will be interesting to observe the future spread, if any, of this phenomenon, perhaps to other dialects, so that the application of a rule such as (77) becomes more general, i.e., more frequent among the speakers of Puerto Rican, Dominican, and MCS, and also perhaps common in other dialects of Spanish as well.

4.9.5 Final Consonant Deletion

In standard American Spanish, the inventory of consonants that may occur in word-final position is limited to the following:

| | | | | |
|---|---|---|---|---|
| (79) a. | /n/ | pan 'bread' | [pán] |
| b. | /d/ | verdad 'truth' | [berðáð] |
| c. | /r/ | mar 'sea' | [már] ~ [márr̃] |
| d. | /l/ | sol 'sun' | [sól] |
| e. | /s/ | tos 'cough' | [tós] |
| f. | /x/ /h/ | reloj 'clock' | [r̃elóx] ~ [r̃elóh][51] |

In MCS, however, all of these word-final consonants may, in the rapid speech of some speakers, be deleted, although no speaker of this dialect regularly deletes all word-final consonants. Shown below in (80) are examples of how such lexical items may, at times, appear:

| | | | |
|---|---|---|---|
| (80) a. | pan 'bread' | [pán̪] ~ [pã́n̪] ~ [pã́] |
| b. | verdad 'truth' | [berðá] |
| c. | mar 'sea' | [máɪ̯] ~ [má] |
| d. | sol 'sun' | [sóɪ̯] ~ [só] |
| e. | tos 'cough' | [tóh] ~ [tó] |
| f. | rey 'king' | [réy] |

These data show another instance in MCS of the spread of a phonological change to a more general environment, i.e., all consonants in word-final position may be realized as [ø].

The deletion of only some of these consonants has heretofore been common in some Spanish dialects. The deletion of [x] ~ [h] in word-final position occurs in almost all dialect areas. The deletion of [ð] in word-final position, although not as general as word-final [x] ~ [h] deletion, is extremely common in many dialects. The deletion of word-final /s/, although even less general, does frequently occur in some Spanish dialects.

In MCS, word-final consonant deletion is becoming even more general, i.e., it has spread to all word-final consonants.

Although the deletion of one or more of the segments /n/, /l/, or /r/ in word-final position occurs in many Spanish dialects, it is uncommon that any one dialect will delete all three of these segments in this environment. A cross-reference of the relative dialectal features in Resnick (1975) reveals that there are only two such dialect areas in American Spanish: (1) Bolívar, Colombia (Flórez, 1949, 1953, and 1960);[52] and (2) Cuba (Isbaşescu, 1968a).[53]

It is clear that, in the case of final consonant deletion, this process has generalized to all other consonants in MCS in some speakers. Only time will tell if this type of sound change will spread further to all speakers of MCS, or whether it will spread to other dialects of Spanish.

4.9.6 The Occurrence of [š]

The surface manifestation of [š], as a phonetic variant of the systematic phoneme /č/, discussed in section 3.7 of the present study, has been reported in numerous phonological studies of Cuban Spanish (e.g., Isbaşescu, 1968a; Bertot, 1969; Lamb, 1958; Sosa, 1974).

Isbaşescu (1968a) reports that /č/ → [š] applies most frequently in word-medial rather than word-initial position.

Lamb (1968) reports that [š] as a phonetic manifestation of systematic /č/ occurs predominantly in female informants.

Based on the above data, it is clear that the occurrence of [š] as a phonetic manifestation of /č/ in all word-medial and word-initial environments[54] in MCS is another example of a sound change that has spread to a more general environment; i.e., from predominantly

word-medial position, and from predominate use by women, to all word-medial and word-initial environments, and to use by both male and female speakers of MCS.

Below are some examples of /č/ appearing as [š̌] in these environments:

(81) a. chico 'boy' [šíko] ~ [číko]

b. chivar 'to annoy' [šiβár] ~ [čiβár]

c. chicle 'gum' [šíkle] ~ [číkle]

d. muchacho 'boy' [mušášo] ~ [mušáčo] ~ [mučášo] ~ [mučáčo][55]

e. mucho 'much' [múšo] ~ [múčo]

f. leche 'milk' [léše] ~ [léče]

g. chícharo 'pea' [šíšaro] ~ [šíčaro] ~ [číšaro] ~ [číčaro]

Items (81a), (b), and (c) show [s] alternating with [c] in word-initial position; (81d), (e), and (f) show [s] and [c] in free-variation in word-medial position; item (81g) shows the alternation of [š̌] and [č̌] in both word-initial and word-medial environments.

As previously mentioned in Chapter II of this study, Isbaşescu (1968a) and Lamb (1968) claim that [š̌] is limited to predominately word-initial environments and its usage generally limited to female informants. It should be recalled here that, according to the data used in this study from MCS, neither of these claims can be supported. Of the total number of occurrences of the [š̌] surface variant of systematic /č/, only 31.6% occurred in word-initial position, while the remaining 68.4% occurred word-medially. As for the latter claim, it was previously shown in section 3.7 of this study (Table XXIX),

that of the total number of occurrences of [š], 51.3% were used by male speakers, and 48.7% by female speakers.

4.10 Conclusions to Chapter Four

A series of theoretical arguments have been presented in this chapter based on the large corpus of data previously presented in Chapter Three of this study. Many of these data suggest that an alternate analysis of the phonological component of MCS may be needed, rather than what has been assumed under the current generative model, e.g., the [± continuant] status of /BDG/; the systematic nasal phonemes of MCS, i.e., /m ñ n/ versus /m ñ ŋ/.

These data also suggest that the phonological rules of rapid speech are different from those of slower rates of speech. It has been previously suggested in the current study that the only real, i.e., unaffected, type of speech for any natural language is rapid speech, and that our analyses should reflect this fact. It has generally been the case in previous phonological studies that slower rates of speech have been considered as basic, while rapid speech has been generally regarded as a deviation from the norm. While the analysis of slower, more careful rates of speech is more aesthetically appealing, in that it requires fewer, less complex phonological rules, and it tends to provide basically more symmetrical systems of segments and rules, it is suggested here, however, that only rapid speech should be considered as basic, and any other slower or more careful speech is affected.

Several of the discussions in this chapter involve what appear to be examples of linguistic change in progress, e.g., the different environments of the velar nasal. The status of these changes currently in progress should, at some future date, be investigated.

Furthermore, the data and theoretical arguments presented in Chapters Three and Four of this study deal with only a portion of the phonology of MCS. It would certainly be worthwhile to examine in detail segments and related phonological processes in this dialect, e.g., an empirical study of the percentages of the [±continuant] voiced obstruents in their different environments; a study of the different surface manifestations of the five systematic vocalic phonemes of MCS.

Finally, there are other areas of theoretical interest and importance, based on the data presented in this study, that should be investigated, e.g., the status of /s/ as a systematic phoneme in MCS.

The nascent study of rapid speech phonology needs to be pursued, and it should provide, at least potentially, a great deal of information to phonologists relative to the correctness or inappropriateness of claims and universals found in the present generative model.

## NOTES

[1]See Foley (1965a), and (1965b), for examples of highly abstract underlying representations; Anderson (1969), Harris (1973) are examples of highly abstract applications of rule ordering techniques. It is assumed in the present study that the reader is familiar with such controversies in generative theory as abstractness, rule ordering, morpheme structure constraints versus surface structure constraints, the appropriateness of "global-type rules," etc.

[2]See Crothers (1973) for a good summation of the abstractness controversy; Kiparsky (1973) for arguments for strong constraints on abstractness and global rules; Koutsoudas, Sanders, and Noll (1974) for arguments against rule ordering devices; Hooper (1973) for arguments against abstractness and extrinsic rule ordering.

[3]See Nessly (1974) for a discussion of global rules, derivational constraints, and transderivational constraints.

[4]The symbol [E] is used in this section to represent lax /e/.

[5]For independent motivation for the inclusion of this word-final lax [e], see Harris (1969), especially pages 177-78.

[6]Harris (1969, p. 179) shows that "final e deletion" after [+cor; +ant; -voice] [s] is synchronically unpredictable. The deletion of lax [e] is a problem for any heretofore proposed synchronic analysis, including the one proposed in the present study. This problem will be explored more fully later in this section. The occurrence of [x] in word-final position, after which lax [e] must be deleted provides another problem, but as Harris (1969) points out, reloj [relóx] is the only commonly used word in Spanish in which [x] appears in word-final position. Harris (1969) correctly states that there are other words in some dialects in which [x] appears in word-final position, e.g., troj, borraj, boj, pedicoj, carcaj, relej,"which are venerable conversation pieces among philologists" (p. 181).

[7]This rule of FINAL e DELETION will not necessarily account for recent borrowings into Spanish, e.g., álbum, club, coñac, whose phonetic shape may also be determined by the influence of other factors such as spelling, phonological interference from the source language or the phonological structure of Spanish, which, for example, does not permit /m/, /b/, or /k/ in word-final environments.

[8]The terms rule and process are not used in this study in the sense of Stampe (1972), but more or less interchangeably; a process generally is the effecting of a phonological rule.

[9]In this set of examples, alveolar /n/ has been posited as the underlying representation for the nasal segment, rather than the velar /ŋ/ as suggested in 4.7 of this study. Whether /n/ or /ŋ/ is posited in this section has no effect on the proposed analysis of final e apocope.

[10]The status of /s/, likewise, as a systematic phoneme in MCS, may in the far future be somewhat problematic, particularly in light of the fact that in some Spanish dialects (see section 4.9.4 of the present study) the aspiration of /s/ is no longer limited to syllable-final environments, but may also be aspirated in syllable-initial position, e.g., sí [hí]; dice [díhe]; produce [prodúhe]. Aspiration of syllable-initial /s/ produces some interesting neutralizations, especially in the verbal paradigms of Spanish, since there are many first-person singular preterite forms whose stems end in [h], e.g., dije [díhe]; produje [prodúhe]. The aspiration of /s/ in syllable-initial position in the third-person singular of the present-indicative of these same verbs, e.g., dice [díhe]; produce [prodúhe] neutralizes these forms, i.e., both dice and dije appear as [díhe]; produce and produje as [prodúhe].

[11]For a discussion of the inappropriateness of the use of extrinsic rule ordering, see Koutsoudas, Sanders, and Noll (1974); Hooper (1973); and Venneman (1970 and 1971).

[12]For discussion of the motivated usage of extrinsic rule ordering, see Kenstowitz and Kisseberth (1970 and 1973); and Kisseberth (1972 and 1973).

[13]Another possibility involving word-final systematic /d/ deletion, suggested by Bohdan Saciuk (personal communication) is that e apocope is a global rule. The rule of word-final e apocope must look ahead in the grammar to see that /d/ will be deleted later in the derivation, and therefore it applies.

Professor Saciuk also points out that in Brazilian Portuguese, a phonological rule of word-final /d/ deletion applies after the same single word-final consonants as in Spanish, with the exception of after /d/, after which lax [e] is not deleted because in this dialect the /d/ does not become fricative and no stops are allowed in word-final position.

[14]Other changes, such as [iy] to [i], and [I] to [i], because they do not occur in the phonetic inventory of MCS, are ignored here, as they are not relevant to potential word-final consonants.

[15]Although the standard Spanish word tocino 'bacon' is known to all speakers of MCS, this word is reserved by many speakers to refer to 'slab-bacon'--the type found in pre-1959 Cuba, while becon refers to the normal American variety of sliced bacon.

[16]Canfield (1962, p. 83) lists the following areas of American Spanish in which there is a tendency for /s/ to be aspirated or deleted: Cuba, Puerto Rico, Dominican Republic, El Salvador,

Nicaragua, Honduras, Panamá, Venezuela, the coastal areas of Colombia, Ecuador, México, the north coast of Perú and Chile, and the Buenos Aires region of Argentina, as well as a large portion of its interior.

[17]Credit must be given here to Professor Saciuk, who worked with the different preliminary versions of rule (22), and helped to formulate the solution proposed in this final version.

[18]Since rule (24) is obligatory, some type of ad hoc condition must be applied, because in following the conventions of the generative model, were no such condition attached, parts (a) and (b) would have to apply in disjunctive ordering, which is clearly not the case in the two processes involved in this rule. Without this ad hoc condition, however, there appears to be no way, within the present model, to express the idea that either part (a) or (b) must apply. Another approach, using an if-then condition, e.g., if not (a), then (b), would also grind-out the correct form, but would be equally as unmotivated.

[19]Not only was there no compensatory vowel lengthening occurring before /s/ when it was deleted in word-final position (as was the case when /s/ was deleted in pre-consonantal position), but it was also shown in Hammond (1973) that there was no consistent observable restructuring of the vowel formants before deleted /s/ in either position in MCS. The literature on Spanish phonology abounds with statements to the effect that the vowels before deleted /s/ become restructured, becoming more open, as a compensatory mechanism for maintaining perceptual distinguishability between pairs such as ves [bɛ] versus ve [bé]. For more complete background on this often-repeated hypothesis, see Honsa (1965); Cassano (1972); García (1968); Zamora Vicente (1960); Alarcos Llorach (1968); Navarro-Tomás (1966a) and (1966b); Canfield (1962). None of these authors attempted to experimentally test this hypothesis; nor were any of these authors discussing Cuban Spanish or MCS, but rather, other s-deletion Spanish dialects. Whether such a vowel formant restructuring before deleted /s/ could conceivably take place in some dialects, but not others, is of course an empirical question.

[20]The type of global rule proposed in this study falls within the constraint proposed by Kiparsky (1973), that a global rule may apply only in a derived environment, and may never apply to an underlying form. It is obvious that the global rule of compensatory vowel lengthening proposed in this study applies only to derived environments, i.e., it applies only in environments in which s-deletion has previously occurred.

[21]For a discussion of the concept of "explanation in phonology," i.e., phonological process occurring or failing to occur to maintain or strengthen semantic distinguishability, see Kiparsky (1973, pp. 87-129).

[22]The following "correct forms" of the compound verbs shown in (46b), (c), (d), (f), (h), (j) are given below, from Vox (1973):

| | Verb | Preterite | Future |
|---|---|---|---|
| 46b. | bendecir | bendije, etc. | bendeciré, etc. |
| 46c. | maldecir | maldije, etc. | maldeciré, etc. |
| 46d. | predecir | predije, etc. | prediré, etc. |
| 46f. | satisfacer | satisfice, etc. | satisfaré, etc. |
| 46h. | imponer | impuse, etc. | impondré, etc. |
| 46j. | sostener | sostuve, etc. | sostendré, etc. |

In other words, bendecir, maldecir, and predecir are all conjugated like decir in the preterite, i.e., are irregular, but bendecir and maldecir are regularized in the future, while predecir remains irregular like the non-compound verb decir, from which all three are derived. The preterite and future tense forms of satisfacer, however, are irregular, like the verb hacer; the same case is true for both imponer, which has remained irregular like its related non-compound verb, poner, and sostener, which is irregular in both the preterite and future, like the verb tener, to which it appears to be related, but in fact is not.

[23]Although the discussion throughout this study deals with rapid speech, the different paradigmatic forms discussed in this section are not limited to rapid speech exclusively, but may occur in other levels of speech.

[24]For the sake of brevity and non-repetition, only the forms of the preterite and future have been shown in (39). As might be expected, the same type of irregular versus regularized compound forms are regularly observed in related tenses, such as the conditional (formed on the future stem), and the imperfect subjunctive (formed on the preterite stem), e.g.:

| Verb | Conditional | Imperfect subjunctive |
|---|---|---|
| decir | diría | dijera |
| bendecir | bendiría ~ bendeciría | bendijera ~ bendiciera |

The same irregular versus regularized alternation of compound forms may be regularly observed in past participle forms, e.g.,

| Verb | Past participle |
|---|---|
| decir | dicho |
| bendecir | bendito ~ bendecido |

[25]It appears that the only suitable way of determining the frequency percentages of these items would be by observing them in normal speech. Unfortunately, the amount of time required to obtain a sufficient number of occurrences of these items to make such percentages of occurrence meaningful renders such an approach highly impractical, if not impossible.

[26]In speaking with native speakers who will normally question or correct what they consider incorrect or substandard forms, e.g., parents, literature professors, grammarians, etc., I have intentionally used both the irregular and regularized forms of these compound verbs to see if they would elicit any negative reactions. While this type of approach is anything but scientific, owing to the presence of many uncontrolled variables, it is nevertheless interesting that not once was a question raised or correction offered for either form of any of these compound verbs.

On the other hand, I feel 100 per cent certain that the use of such regularized forms of the non-compound verbs, e.g.:

| Verb | Preterite | Future |
|---|---|---|
| decir | *dició | *decirá |
| hacer | *hació | *hacerá |
| poner | *ponió | *ponerá |
| tener | *tenió | *tenerá |

would elicit a great number of corrections or questions, or even a lack of comprehension.

[27]Although sostener would appear to be historically related to /sos+tenere/, it is in fact, according to Corominas, derived from Latin sustinēre (1218).

[28]The Spanish verb hacer is derived from the Latin verb facere (Vox, 1973). Word-initial /f/ from the Latin source word underwent the following changes: /f/ → /h/ → [ø], and appears as [ø] in modern Spanish, cf. hacer [asér]. This phonological change did not take place, however, in the verb satisfacer. There are many lexical items historically related to hacer in modern Spanish which still contain word-initial /f/, e.g., factor; factoría; fácil; facilidad.

[29]For a discussion of the motivation for the revision of Harris' (1969) original rule of nasal assimilation, see note 6 of Chapter Three.

[30]Also in MCS rapid speech, the segment [ɣ̞], a voiced velarized rounded fricative is possible, before which the velar nasal may likewise appear.

[31]By dissimilation is meant here that in a lexical item like once, whose systematic phonemic representation is /onse/, with an alveolar nasal occurring before an alveolar spirant, the alveolar /n/ dissimilates, i.e., changes its point of articulation from alveolar (in which it is already homorganic with the following segment) to velar. Normally in Spanish, as in most of the world's languages, the opposite occurs, with a nasal segment changing its point of articulation to be homorganic to a following obstruent.

[32]A sentence such as Un savant anglais arrive à Paris, out of context is ambiguous, and can mean either (1) 'A wise Englishman

arrives at Paris' or (2) 'An English scientist arrives at Paris.' In spoken French, the presence or absence alone of liaison between savant and anglais determines whether the semantic interpretation is (1) or (2).

[33]This phonological rule, /s/ → [z] /____#V, is not to be confused with the well-known phenomenon of /s/ voicing assimilation which occurs in many Spanish dialects:

$$/s/ \rightarrow [z] / \underline{\quad}(\#)\ [_{C}{}^{+voice}]$$

e.g., mismo [mízmo]
esbozo [ezβóso]
los libros [lozlíβros]

In these dialects, however, items (68a) and (68c) would appear as follows:

los ojos [losóhos]
estas aguas [estasáɣwas]

[34]It has been reported (Bohdan Saciuk--personal communication) that in the case of one Ecuatorian informant, the process /s/ → [z] has been generalized, so that it occurs in all word-final environments, including before voiceless consonants and pauses, e.g., los tacos [loztákoz].

[35]It is conceivable that the authors of these 1968 descriptions did not notice the presence of this phenomenon in these other environments.

[36]The phonetic symbols for the different surface manifestations of the systematic nasal /n/ represent the following:

| | |
|---|---|
| [ŋ] | velar nasal |
| [m] | bilabial nasal |
| [ɱ] | labio-dental nasal |
| [n̪] | dental nasal |
| [n] | alveolar nasal |
| [n̠] | palatoalveolar nasal |
| [ñ] | palatal nasal |

[37]In careful speech, however, nasal assimilation may also occur in MCS.

[38]The term dissimilation is used here in the same sense that was discussed previously in note 31 of this chapter.

[39]Although, in MCS rapid speech, [n] is excluded from word-initial environments, it does occur in syllable-initial position if there is a word boundary in the underlying representation. In an item such as (64r), word-final /n/ of en, when followed by another word whose initial segment is [+syllabic], becomes the onset of the following syllable, i.e., [e-ná-gwah].

[40]A later rule of spirantization converts /b d g/ to [β̞ ð̞ ɣ̞] in this environment.

[41]Rule (66) can be stated positively in the following manner (from Harris, 1969, p. 40):

$$\begin{bmatrix} +\text{obs} \\ -\text{tense} \end{bmatrix} \rightarrow \begin{bmatrix} +\text{cont} \\ -\text{str} \end{bmatrix} \Big/ \left\{ \begin{bmatrix} +\text{obs} \\ +\text{cont} \end{bmatrix} \right\} \quad (\#) \quad \begin{bmatrix} \langle \alpha\text{cor} \rangle \end{bmatrix}$$

[42]Rules (65) and (66) are in feeding order, since after the application of (65), rule (66) would apply, giving [+cont] surface forms.

[43]Also, here, most likely as part of a general weakening process (as previously mentioned in section 4.9.2 of this study), intervocalic /b/ may also appear as [w] or [ø] in MCS rapid speech, e.g., la bola [laβ̞óla] ~ [lawola] ~ [laóla]; intervocalic /d/ may likewise appear as [ø], e.g., lado [láð̞o] ~ [láo] ~ [láw]; intervocalic /g/ may appear as [ø] also, e.g., lago [lágo] ~ [lao] ~ [láw]. These types of weakening processes are also discussed in Hooper (1973).

[44]Oroz (1966) reports the occurrence of the continuants [β̞ ð̞ ɣ̞] in absolute-initial position in Chilean Spanish. Jorge (1974) also reports in Dominican Spanish the occurrence of [β̞] in absolute-initial position and after nasals; regarding [ð̞], she states that in absolute-initial position it was occlusive in almost all her subjects, and was spirantized between vowels; she reports that [ɣ̞] may also occur in absolute-initial environments in Dominican Spanish.

[45]Those who would defend UIC XXIV would claim, of course, that part (a) does not claim that such combinations as /pl/, /pr/, etc. are impossible in languages, but rather that such combinations are not as frequent or universal in natural languages.

I am indebted to Bohdan Saciuk for having pointed out some of these weaknesses contained in UIC XXIV.

[46]In Mexican Spanish dialects, because of Aztex influence, clusters such as /tl/ and /dl/ do occur, but only in a small number of lexical items, all of which are borrowings, and not native Spanish words, e.g., Tlaxcala [tlakskala] ~ [tlaskála].

[47]The rule of spirantization shown here, as suggested by Bohdan Saciuk, is much simpler and more natural (in the sense that it is a rule of assimilation) than the rules of spirantization shown in Harris (1969, p. 39).

$$\begin{bmatrix}+\text{obs}\\-\text{tense}\end{bmatrix} \rightarrow \begin{bmatrix}+\text{cont}\\-\text{str}\end{bmatrix} \quad \text{except } / \left\{ \left\langle \begin{bmatrix}\#\\-\text{obs}\\-\text{cont}\\\alpha\text{cor}\end{bmatrix} \right\rangle \right\} \quad \left[ \frac{\qquad}{\langle \alpha \text{cor} \rangle} \right]$$

or with the environments expressed affirmatively (p. 40):

$$\begin{bmatrix}+\text{obs}\\-\text{tense}\end{bmatrix} \rightarrow \begin{bmatrix}+\text{cont}\\-\text{str}\end{bmatrix} \quad / \quad \left\{ \left\langle \begin{bmatrix}+\text{obs}\\+\text{cont}\\-\alpha\text{cor}\end{bmatrix} \right\rangle \right\} \ (\#) \left[ \frac{\qquad}{\langle \alpha \text{cor} \rangle} \right]$$

[48]Although I have personally observed syllable-initial s-aspiration in several Puerto Rican speakers, this phenomenon is not well documented in published sources. Malaret (1955, p. 47) gives examples of syllable-initial s-aspiration from two sources, Morales Cabrera (1932) and Ramírez de Arellano (1928). Navarro Tomás (1966, p. 74) gives a disclaimer that, according to his notes, /s/ does not appear as [h] in syllable-initial environments in Puerto Rican Spanish. Interestingly, however, in this same work (p. 73), he gives the example of los surcos [lo huko], taken from Playa Grande, Vieques.

[49]For Cuban Spanish, Isbaşescu (1968a, p. 47) reports /s/ appearing as [h] in syllable-initial position.

[50]See note 10 of this section for a discussion of phonetic neutralizations in these dialects involving pairs such as dice and dije.

[51]Although the surface representation [r̃elo̞h] may occur in careful speech, it is unusual, and [r̃elo̞] is far more common.

[52]In his feature index, Resnick (1975, p. 156) reports /n/ → [ø] /____# for Bolívar, Colombia (San Basilio de Palenque), "after /o u/; vowel not nasal--Negroes." In his country index, however, he fails to indicate this phenomenon. At any rate, this process seems to be rather limited, and found among a very small percentage of speakers of this coastal department of Colombia.

[53]Isbaşescu (1968a) is the only author to report that in Cuba (entire country) /n l r/ all may sometimes appear as [ø]. The same limitations of this study, as previously mentioned in Chapter II, should be noted here.

[54]/č/ may not occur in word-final environments in any dialect of Spanish.

[55]Because of the process of word-final devoicing of vocalic segments after palatals, previously discussed in section 3.8 of the present study, the four different possible surface forms for muchacho shown in (87) could also appear with a word-final voiceless vowel, increasing the possible number of potential surface outputs for this lexical item to eight.

# CHAPTER FIVE

# SUMMARY AND CONCLUSIONS

## 5.1 Introduction

This study represents the first presentation of a somewhat extensive body of information concerning MCS, which has, by now, become one of the major Spanish dialects of the United States.[1] The main body of this study consists of three distinct, yet interrelated sections.

## 5.2 Summary and Conclusions--Previous Research Related to MCS

The first major section of this study, contained in Chapter Two, presents a detailed, critical annotated bibliography of all previous studies done on Cuban Spanish and MCS, including all discoverable published and unpublished studies, M.A. and Ph.D. theses and papers presented to linguistic groups.[2] As there is a great deal of on-going research on Cuban Spanish and MCS, there are a number of very recent studies which have appeared too late to be included in this study, or which are to appear in the near future.

At a recent symposium in San Juan, Puerto Rico, several papers were presented on Cuban Spanish and MCS.[3]

At the present time, Humberto López Morales, Bohdan Saciuk, Tracy Terrell, and Jorge Guitart (all personal communication) are also working on new studies on Cuban Spanish. Donald N. Flemming (personal communication) is currently undertaking a lexicological research project on MCS. Also, Lydia Monocal (personal communication) is currently working on an M.A. thesis at Florida Atlantic University, under the

direction of Melvyn C. Resnick, on a descriptive phonological study of the speech of older Cubans. Also, since Chapter Two was written, I have completed studies on phonemic restructuring of the MCS voiced obstruents (Hammond, 1975a) and on a global rule in MCS (Hammond, 1975b). Two further studies on MCS which I have recently completed and which will appear in the near future deal with the velar nasal in MCS (Hammond, 1976b), and with the surface manifestations of liquids in MCS (Hammond, 1976c). Furthermore, it is hoped that there are many more studies currently being done on Cuban Spanish and MCS about which I am unaware, since in the case of both of these dialects, a great deal more research needs to be done.

## 5.3 Summary and Conclusions--Rapid Speech Rules and Data from MCS

The second major section of this study, contained in Chapter Three, presents data concerning fourteen different consonantal segments and one process concerning vocalic segments in MCS rapid speech. Percentages of occurrence for each of these different segments along with variable rules stated in terms of percentages of application are also given. There are two significant contributions to the study of dialectal phonology provided by Chapter Three: (1) It deals specifically with rapid speech; (2) It gives actual percentages of occurrence of the different surface manifestations of different systematic phonemes of MCS as well as the percentages of application of each section of these variable rules which are needed to account for these phonetic forms.

Very recently, there has been a great deal of interest shown among several linguists relative to rapid speech processes in different

Spanish dialects. It appears that many linguists are now beginning to realize the value and the importance of describing languages and/or dialects in terms of their rapid speech, rather than describing slower, affected rates of speech. It is, to be sure, very difficult to transcribe rapid speech, and a great many highly variable phonological rules are encountered, i.e., the descriptions of rapid speech do not provide neat, symmetrical patterns of phonological rules and allophonic distribution. Nevertheless, as stated in Chapter Three, it is my feeling that rapid speech is the only true form of speech, and it is therefore, the type of speech we should be most interested in studying and describing, and, furthermore, it is on rapid speech that we should be basing our concepts of phonological theory. If, therefore, rapid speech is important, then it is obvious that there is a serious need for many more studies to be produced which are based on rapid speech, all the difficulties in producing such studies notwithstanding.

The importance of having available phonological studies which provide actual percentages of occurrence of different rules and surface forms should also be obvious. We have far too many phonological studies on different Spanish dialects of the "show and tell" variety, i.e., phoneme /A/ has the allophones [A] and [B]. What is more important, is knowing whether these allophones each occur 50% of the time, or whether allophone [A] occurs 1% of the time, and allophone [B] occurs 99% of the time. Only when linguists have a sufficiently large body of data with such actual percentages of occurrence of these surface forms, can our current notions about language universals and phonological theory really be tested.

## 5.4 Summary and Conclusions-- Theoretical Implications

The third major section of this study, contained in Chapter Four, discusses a series of theoretical questions which result from the rapid speech data that were previously presented in Chapter Three of the present study.

Based on data from MCS rapid speech, some of the traditional analyses of Spanish phonological processes found in various generative descriptions of different Spanish dialects, e.g., the underlying [-continuant] status of the voiced obstruents /b d g/, are questioned, and alternative analyses are proposed. Also, some of the traditional analyses are rejected because they depend on the use of extrinsic rule ordering, highly abstract underlying representations, etc., notions which are rejected herein, as they have been previously rejected by other linguists, for having little or no psychological reality, e.g., the traditional generative analysis of the systematic nasals of Spanish as being /n ñ m/.

It seems to be the case, based on the relatively small corpus of data used in the present study, that many phonological processes that occur in rapid speech are difficult to account for using the traditional generative approach, or for that matter, any other heretofore proposed linguistic theory. The data on nasals in section 3.3 of the present study reveal that the processes of syllable-final and word-final nasal deletion, with prior nasalization of the preceding vowel, is a rather frequent phonological process in MCS rapid speech.[4] As discussed in Chapter Four, such data force us to either reject, or at least reanalyze our thinking relative to standard nasal assimilation, at least for

rapid speech. If a relatively small corpus of rapid speech data from a single Spanish dialect can cause a number of weaknesses to surface in some of our current descriptions of Spanish, it seems very likely that a large amount of rapid speech data, from other Spanish dialects, may well cause some important revisions in both our current phonological model, and in our ultimate phonological description of Spanish as well as of other languages.

## NOTES

[1]There are, as previously mentioned, two studies in progress on MCS that also deal with a large body of data. One of these, being conducted by Bohdan Saciuk, will present a detailed phonological study of MCS. The other study, Bjarkman (forthcoming), deals with the loan-word phonology of MCS.

[2]Whether all previous studies were discovered, however, remains to be seen. It is very probable that all previous published articles and books, as well as all Ph.D. dissertations, have been included. Probably, no M.A. theses were overlooked. As far as papers presented and unpublished studies are concerned, however, it is highly probable that some of these have been unintentionally omitted.

[3]Symposium on "Corrientes actuales en la dialectología del caribe hispánico", held April 1, 2, and 3, 1976 at the Río Piedras campus of the University of Puerto Rico. Papers dealing partially or entirely with Cuban Spanish or MCS are: López Morales (1976); Terrell (1976c); Guitart (1976); Hammond (1976a). Many of the papers from this symposium are being published in the near future in Actas, to be released by the University of Puerto Rico Press.

[4]A finding supported also by Terrell's recent study on nasals in Cuban Spanish (Terrell, 1975c).

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